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ABSTRACT

A core curriculum was developed as a result of the Utah State Board of Education's establishment of a policy requiring identification of specific core curriculum standards to be completed by all students in kindergarten through grade 12 as a requisite for graduation from secondary school. The core curriculum represents those standards of learning that are essential for all students. The standards relate to ideas, concepts, and skills that provide the foundation for subsequent learning. This document presents the core curriculum standards for kindergarten through grade 3. An introductory section explains various requirements of the state board of education pertaining to elementary and secondary education. The next sections are organized by the following subject areas: (1) arts; (2) information technology; (3) language arts; (4) library media; (5) mathematics; (6) responsible healthy lifestyles; (7) science; and (8) social studies. Each of these sections is further divided by grade level. For each grade level, core standards are stated and specific objectives related to the standards are listed. (TM)

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ED 405 070

Core Curriculum

REVISED

1991

Grades K-3

Utah State Board of Education

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
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PS 022 371

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ELEMENTARY CORE CURRICULUM STANDARDS

UTAH STATE BOARD OF EDUCATION

Levels K - 3

ARTS
(Visual Arts, Music, Dance, Drama)

INFORMATION TECHNOLOGY

LANGUAGE ARTS
(Drama)

LIBRARY MEDIA

MATHEMATICS

RESPONSIBLE HEALTHY LIFESTYLES
(Health, Movement & Fitness)

SCIENCE

SOCIAL STUDIES

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Utah State Office of Education
Curriculum Section
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Salt Lake City, Utah 84111

INTRODUCTION

Action by the State Board of Education in January 1984 established a policy requiring the identification of specific core curriculum standards which must be completed by all students K-12 as a requisite for graduation from Utah's secondary schools. This action was followed by three years of extensive work involving all levels of the education family in the process of identifying, trial testing, and refining these core curriculum standards for Utah's schools.

The core curriculum represents those standards of learning that are essential for all students. They are the ideas, concepts, and skills that provide a foundation on which subsequent learning may be built.

The core should be taught with respect for differences in learning styles, learning rates, and individual capabilities without losing sight of the common goals. Although the core curriculum standards are intended to occupy a major part of the school program, they are not the total curriculum of a level or course.

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THE ELEMENTARY AND SECONDARY SCHOOL PROGRAM OF STUDIES AND HIGH SCHOOL GRADUATION REQUIREMENTS

STATEMENT OF PHILOSOPHY

The primary goal of education is the development of individuals who possess the knowledge, skills, and human characteristics neccesary to enable them to live meaningfully as individuals and as positive contributors to society. To achieve this ultimate goal, the individual must be provided experiences to develop skills in language and thinking; scientific understanding; mathematics; historical perception; aesthetic appreciation; social interaction; movement, fitness, and health; and career competencies.

ELEMENTARY EDUCATION

The elementary school reaches the greatest number of students for a longer period of time during the most formative years of the school experience. This unparalleled responsibility makes it imperative that each elementary school be provided with effective leadership, meaningful standards, a balanced curriculum, sufficient means, and competent staff.

SECONDARY EDUCATION

The secondary school should provide the opportunity for every student to have a challenging educational experience which will prepare him/her to pursue a fulfilling and productive role in society, which both transmits and enhances our culture. A comprehensive curriculum with enough flexibility to strengthen individual talents and interests must be available for all students.

R300-700. The Elementary and Secondary School Core Curriculum and High School Graduation Requirements.

R300-700-1. Definitions.

A. "Board" means the Utah State Board of Education.

B. "IEP" means individual education program.

C. "Special assignment teacher" means a teacher assigned to:

(1) alternative school settings with self-contained classrooms in which the teacher must teach several subjects;

(2) teach homebound students with the expectation that several subjects will be covered by the same teacher; or

(3) necessarily existent small or rural schools with limited faculty and enrollment in which teachers must teach more than three core subjects.

R300-700-2. Authority and Purpose.

A. This rule is authorized under Article X, Section 3, of the Utah State Constitution which vests general control and supervision of the public education system in the State Board of Education, Section 53A-1-402(1) (b), U.C.A. 1953, which directs the Board to make rules regarding competency levels, graduation requirements, curriculum, and instruction requirements, and Section 53A-1-401(3), U.C.A. 1953, which allows the Board to adopt rules in accordance with its responsibilities.

B. The purpose of this rule is to specify the minimum core curriculum for the public schools and high school graduation requirements.

R300-700-3. General Requirements - Course Standards.

The Board establishes minimum course description standards and objectives for each course in the required general core. Course descriptions for required and elective courses are developed cooperatively by local school districts and the Utah State Office of Education. The descriptions shall contain mastery criteria for the course and shall stress mastery of the criteria rather than completion of predetermined time allotments for subjects. Implementation and assessment procedures are the responsibility of local school districts.

R300-700-4. General Requirements - Teacher Qualifications.

Teachers may not be assigned to teach any course unless, for the subject area to which they are assigned, they hold a current Utah teaching certificate endorsed in the subject area, have completed an undergraduate or graduate major or minor in the subject area, have completed a Board approved inservice program, or have demonstrated competency in the subject area.

R300-700-5. General Requirements - Special Assignment Teachers.

A. Special assignment teachers must hold a Basic or Standard Certificate with endorsement(s) for the course(s) which they are assigned to teach. In addition, personnel must have completed at least nine quarter hours of state approved college or inservice course work in each of the subject areas in which they are assigned.

B. Special assignment teachers are temporarily authorized for the duration of their special assignment and do not receive a permanent endorsement for the subject area until they have completed the equivalent of a subject matter minor, at least 24 quarter hours of state approved college course work in the field, or have been declared competent to teach the subject by the Utah State Office of Education Committee on Demonstrated Competency .

R300-700-6. General Requirements - Unit of Credit.

A. A unit of credit or fraction thereof shall be given upon satisfactory completion of a course or learning experience in compliance with state course standards. Students also may complete a course on a performance basis in which case assessment of mastery will be the responsibility of the local boards of education. Credit can be awarded only once for a specific required course with the same content during the secondary school experience.

B. Credit may be earned in any of the following ways:
  (1) successful completion of a course;
  (2) demonstrated proficiency, via pre-assessment;
  (3) demonstrated mastery of approved courses outside of the school day or year;
  (4) concurrent enrollment in approved post-secondary training institutions;
  (5) demonstrated mastery of approved correspondence or extension courses; or
  (6) upon application, demonstrated mastery in special experimental programs.

R300-700-7. General Requirements - Instructional Time.

School districts shall organize flexible time blocks for instruction which accommodate outcome-based curriculum. To help the Board keep apprised of instructional time variations, districts shall submit their instructional time schedule to the Utah State Office of Education for approval.

R300-700-8. General Requirements - Student Education Plan.

A student education plan is cooperatively developed by the student, the student's parents, and designated school personnel. This plan is guided by general requirements and individual student interests and goals. It is formally reviewed, at least, at the beginning of grade one, at the end of grades three and six, and annually thereafter. Each student's high school plan shall identify an area of concentration, which may be as many as four to five units, in a cluster related to the student's post-secondary goal.

R300-700-9. General Requirements - Diploma.

In Utah's public schools, a high school diploma is granted to a student who has met Board curriculum requirements and any additional requirements of the local school district.

R300-700-10. Requirements for Elementary Education.

A. The Board shall establish standards for elementary education which include the identification of a general core curriculum. Implementation and formal assessment of student mastery of the general core curriculum are the responsibilities of the local boards of education. At a minimum, formal assessment shall occur during or at the completion of the primary grades, grade three, and again during or at the completion of the intermediate grades, grade six. Informal assessment should occur on a frequent ongoing basis to ensure continual student progress. Provision for remediation for all students who do not achieve mastery is required.

B. Required Elementary Core Curriculum:

REQUIRED ELEMENTARY CORE CURRICULUM GRADES K-6	
GENERAL CORE	**OPTIONS**
Language Arts Reading Writing Speaking Listening Mathematics Science Social Studies Introductory Citizenship Principles and Practices The Arts Responsible Healthy Lifestyles Information Technology	Foreign Language

C. All handicapped students are required to demonstrate mastery of the core curriculum. If a student's handicapping condition precludes the successful demonstration of mastery, the IEP team, on a case by case basis, may exempt the student or modify the mastery demonstration to accommodate the student's handicap.

R300-700-11. Middle and High School Requirements.

A. The Board provides general direction and standards in secondary education. Students in grades seven and eight must earn a minimum of 12 units of credit. Students in grades nine through twelve must earn a minimum of 24 units of credit. Districts may required additional units of credit. Formal assessment of student mastery of the general core courses shall occur as a minimum during or at the completion of grades eight, ten, and twelve. Implementation and assessment of student mastery of the core courses are the responsibility of the local board.

B. Middle Education Core Curriculum:

GENERAL CORE - 10.5 Units PLUS REQUIRED ELECTIVES - 1.5

SUBJECT AREAS	REQUIREMENTS
Language Arts	2.0 Local District Option
Mathematics	2.0
Science	1.5
Social Studies	1.5
The Arts	1.0
Responsible Healthy Lifestyles	1.5
Information Technology	Credit Optional
Applied Technology Education	1.0

C. High School Core Curriculum:
(1) Required credits.

HIGH SCHOOL CORE CURRICULUM
GRADES 9-12 -- 24 UNITS OF CREDIT REQUIRED

GENERAL CORE - 14.5 Units PLUS REQUIRED ELECTIVES - 9.5

SUBJECT AREAS	REQUIREMENTS
Language Arts	3.0
Mathematics	2.0
Science 1 Biological 1 Physical	2.5
Social Studies	3.0
The Arts	1.5
Responsible Healthy Lifestyles	2.0
Information Technology	Credit Optional
Applied Technology Education	1.0
Selected Electives	9.5

(2) Any state-approved applied technology course, or the applied technology core course fulfills the applied technology education requirement.

(3) Selected electives units of credit provide a means for specialization related to student interest and post-secondary goals.

(a) College Entry Cluster:

Foreign Language	2.0 units of credit
Mathematics	1.0 unit of credit
Science	1.0 unit of credit
Electives	4.5 units of credit

(b) Applied Technology job Entry Clusters:
(Select one)

Technical Emphasis	4.0 units of credit
Applied Technology Emphasis	5.0 units of credit
Computer Science	.5 unit of credit

(c) Electives: 4.0 - 5.0 units of credit

D. Information Technology standards in the middle education and high school core curriculum may be taught either by integrating them into other areas of the curriculum or in a specific class. Integration requires the district to submit a plan detailing at what level and in which class each standard will be taught. Districts establishing a specific class may offer .5 unit of credit.

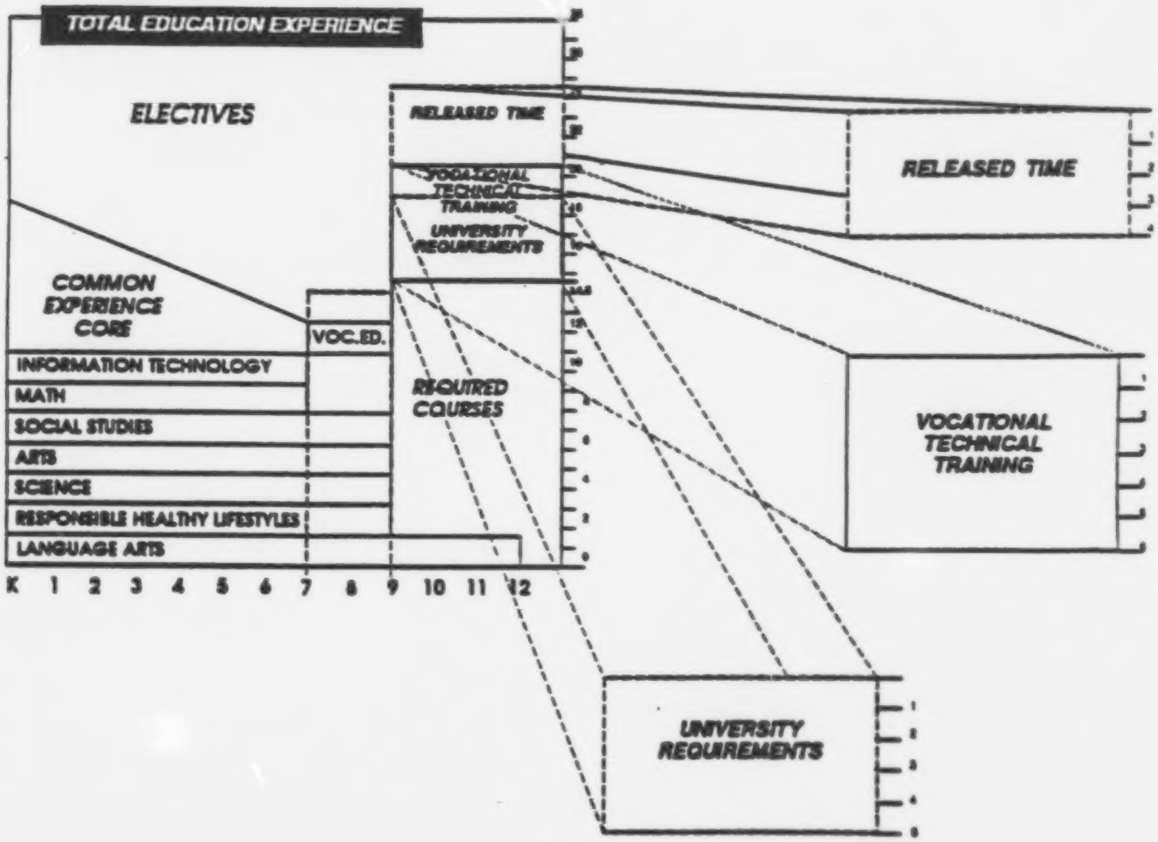
E. All handicapped students are required to demonstrate mastery of the courses in the middle education and high school general core. If a student's handicapping condition precludes the successful demonstration of mastery, the IEP team, on a case by case basis, may exempt the student or modify the mastery demonstration to accommodate the student's handicap.

KEY: Curricula
1989

Art X Sec. 3
53A-1-402(1)(b)
53A-1-401(3)

CORE COMPLETION GUARANTEES STUDENT ACCESS

1. Guarantees common experience which forms the foundation skills.
2. Guarantees access to jobs and entry into college or vocational-technical education through required course completion.
3. Permits intensive vocational-technical education, entry into research universities, and a released-time component through specialization options.


TOTAL EDUCATION EXPERIENCE
ELECTIVES
RELEASED TIME
VOCATIONAL TECHNICAL TRAINING
UNIVERSITY REQUIREMENTS
COMMON EXPERIENCE CORE
VOC.ED.
REQUIRED COURSES
INFORMATION TECHNOLOGY
MATH
SOCIAL STUDIES
ARTS
SCIENCE
RESPONSIBLE HEALTHY LIFESTYLES
LANGUAGE ARTS
K 1 2 3 4 5 6 7 8 9 10 11 12
RELEASED TIME
VOCATIONAL TECHNICAL TRAINING
UNIVERSITY REQUIREMENTS

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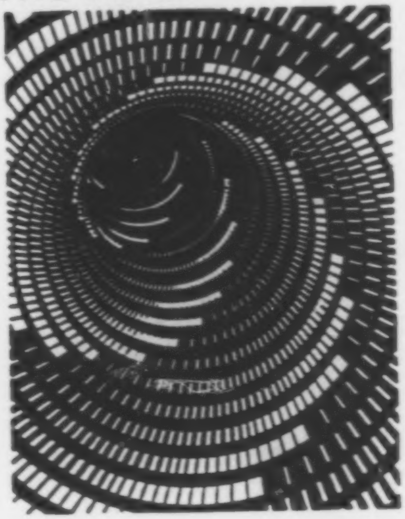
The Arts



CORE CURRICULUM FOR THE ARTS

The arts in the core include visual arts, dance, drama, and music. Education in the arts should develop students' abilities in each of three roles -- participant, observer/listener, and critic. These roles are distinct, yet complementary. The student's education is limited if he/she masters only one role; furthermore, each role requires a set of distinct skills which taken by itself is limited. When these skills are integrated, they provide the necessary and complete background for informed response in the arts.

We take a participant role when we deal actively and directly with the medium of an art form; e.g., acting, painting, singing, or dancing. We take an observer/listener role whenever we actively respond to a work of art. We take a critic role whenever we make informed judgments about works of art.

It is the ability to work well in each of these roles that will encourage informed and appreciative responses to the arts. We risk prejudice and ignorance without programs designed to create skills and understanding in each of these roles. The roles of participant, observer/listener, and critic provide direction in establishing standards and objectives for each of the arts.

VISUAL ARTS COMPONENT

We are essentially visual beings who learn more by sight than by any other means. For this reason, art education is profoundly basic to both general education and implied education. It is difficult to imagine an activity or even a thought that does not involve perception and imagery. In addition to our preparations for life, visual arts have a significant influence on our culture and family life via such things as advertising, industrial design, packaging, architecture, and clothing design.

ARTS COURSE CHART

K-6
SIS CODE: AR

K-3

VISUAL ARTS COMPONENT

MUSIC COMPONENT

DANCE COMPONENT
(INTEGRATED WITH HEALTHY LIFESTYLES)

DRAMA COMPONENT
(INTEGRATED WITH LANGUAGE ARTS)

4-6

ART COMPONENT

MUSIC COMPONENT

DANCE COMPONENT
(INTEGRATED WITH HEALTHY LIFESTYLES)

DRAMA COMPONENT
(INTEGRATED WITH LANGUAGE ARTS)

MASTERY OF CORE
Required

7-8

VISUAL ARTS COMPONENT
FOUNDATIONS I
0.5 unit*
SIS CODE: AV

MUSIC COMPONENT
*0.5 UNIT SELECTED FROM:
GENERAL MUSIC
CHORUS
BAND
ORCHESTRA
SIS CODE: AM

DANCE COMPONENT
(INTEGRATED WITH HEALTHY LIFESTYLES)

DRAMA COMPONENT
(INTEGRATED WITH LANGUAGE ARTS)

Basic Core
1.0 Unit Required

9-12
SIS CODE:AO

VISUAL ARTS COMPONENT	
FOUNDATIONS II	0.5 unit
CLUSTER A CHOICES	0.5 unit
CLUSTER B CHOICES	0.5 unit
CLUSTER C CHOICES	0.5 unit
MUSIC COMPONENT	
MUSIC APPRECIATION	0.5 Unit
MUSIC THEORY	1.0 unit
CHORUS	1.0 unit
BAND	1.0 unit
ORCHESTRA	1.0 unit
DANCE COMPONENT	
BEGINNING DANCE	0.5 unit
INTERMEDIATE AND ADVANCED DANCE	1.0 unit
THEATRE/DRAMA COMPONENT	
BEGINNING THEATRE	0.5 unit
INTERMEDIATE THEATRE	0.5 unit
ADVANCED THEATRE	1.0 unit

CORE OPTIONS
1.5 Units Required

*In the case of a student who has an S.E.P. which indicates the intent to specialize in art or music, the district may approve, on an individual basis, either art or music courses to fulfill the seventh and eighth grades arts requirement.

VISUAL ARTS COMPONENT LEVEL K

VA LEVEL K

SIS NUMBER: 1000
SIS CODE: AR

COURSE DESCRIPTION (Levels K-3)

The visual arts core covers 40 percent of the 206 foundation objectives found in the State Course of Study, **Art Is Elementary**. The lessons from **Art is Elementary** that correlate with the Visual Component are given in parenthesis after each objective. The focus of the core is threefold: (1) Providing students with experiences in making art, (2) helping them to develop observation skills for making aesthetic decisions, and (3) providing students with understanding that enables them to become art critics.

CORE STANDARDS OF THE COURSE

STANDARD 1000-01	**The students will develop skills vital to making art by identifying and drawing the three basic shapes and simple variations of each, and by manipulating elementary art tools. (Participant)**

OBJECTIVES

1000-0101. Draw, cut, or form the three basic shapes: circles, triangles, and rectangles (including squares). (33)

1000-0102. Identify circular, triangular, and rectangular characteristics of common objects. (33)

1000-0103. Improve primary motor skills by manipulating objects such as scissors, glue dispensers, brushes, crayons, and pencils.

1000-0104. Explore the use of a variety of art materials to accomplish the standard.

STANDARD 1000-02	**The students will develop observation skills vital to looking at and discussing aesthetic form by identifying basic colors and color families and comparing objects in terms of size, color, shape, and position. (Observer/Listener)**

OBJECTIVES

1000-0201. Point to an object and state its color. Point to a picture of an object and state its color. (14)

1000-0202. Point to an object and name its color family. Point to a picture of an object and name its color family. (23)

1000-0203. Compare objects in pictures by different artists and state how objects are alike or different with respect to size, color, shape, texture, or position. (27)

1000-0204. Classify objects as "rough" or "smooth," both by feeling and by viewing objects or pictures of objects. (32)

STANDARD 1000-03	**The students will develop skills vital to analyzing and evaluating works of art by comparing objects in terms of size, color, shape, texture, and position; and discussing works of art. (Critic)**

OBJECTIVES

1000-0301. Compare the sizes, colors, shapes, textures, and arrangement of content in works of art.

1000-0302. Discuss the imagined and/or historic story (or message) of works of art.

VISUAL ARTS COMPONENT LEVEL 1

VA LEVEL 1

SIS NUMBER: 1010
SIS CODE: AR

CORE STANDARDS OF THE COURSE

STANDARD 1010-01 **The students will develop skills vital to making art by identifying cast shadows, showing facial expressions in drawing, creating simple clay forms, mixing colors, changing and comparing values, and comparing size relationships of common objects or living things. (Participant)**

OBJECTIVES

1010-0101. Identify and draw shadows cast by people and objects. (Any representation of shadows is acceptable.) (35)

1010-0102. Demonstrate that a given object is larger, smaller, or the same size as another object, i.e, tree to house, or head to body. (37)

1010-0103. Create clay forms with the parts fused together; e.g., animals, plants, airplanes. (42)

1010-0104. Draw faces that show happiness, sadness, or other expressions. (45)

1010-0105. Mix two primary colors to get a secondary color. (49)

1010-0106. Add black or white to a color to change its value. (51)

1010-0107. Arrange objects or swatches of color in order of lightest to darkest. (34)

STANDARD 1010-02 **The students will develop observation skills vital to looking at and discussing aesthetic form by telling how colors may be mixed and how the value of a color may be altered. (Observer/Listener)**

OBJECTIVES

1010-0201. Look at an art print and tell what colors the artist mixed to paint a particular object in that picture. (49)

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1010-0202. Point to an example of a color in an art print that was darkened with black; a color that was lightened with white. (51)

1010-0203. Select five objects in an art print and point to each of them in order of lightest to darkest. (34)

STANDARD 1010-03	**The students will develop skills vital to analyzing and evaluating works of art and studying the artists who produced them by pointing out repetition, identifying effects of the environment, and discussing characteristics of the work or style of artists. (Critic)**

OBJECTIVES

1010-0301. Explain the effects that cultures, climate, economics, and the availability of materials have on the design of buildings. (46)

1010-0302. Point out examples of repetition used in works of art (color, shape, texture, etc.). (47)

1010-0303. Discuss characteristics of the work or style of Hicks, Homer, Klee, Pollock, and Remington.

VISUAL ARTS COMPONENT LEVEL 2

VA LEVEL 2

SIS NUMBER: 1020
SIS CODE: AR

CORE STANDARDS OF THE COURSE

STANDARD 1020-01	**The students will develop skills vital to making art by creating drawings, showing objects in realistic context, having a simple printmaking experience, and mixing secondary and tertiary colors. (Students' products may range from realistic to abstract applications of the objectives.) (Participant)**

OBJECTIVES

1020-0101. Produce a picture with the sky color extending from the top of the picture down to the objects on the horizon. (58)

1020-0102. Draw vertical objects, such as trees and chimneys, perpendicular to the ground line. (59)

1020-0103. Draw people or objects showing logical scale relationships; e.g., parent taller than child, house larger than automobile. (60) and (64)

1020-0104. Use lines to describe the contour of objects and produce a pattern by repeating one or more shapes. (61)

1020-0105. Create prints by stamping or relief print methods. (62)

1020-0106. Use lines, dots, and shapes to add textural details such as brick, grass, shingles, and hair. (63)

1020-0107. Overlap objects in a picture to suggest depth. (65)

1020-0108. Begin a drawing with methods such as blocking in, simplifying as stick figures, and drawing the action. (33)

1020-0109. Label a color wheel; mix secondary and tertiary colors. (72)

1020-0110. Use a variety of media and materials in implementing the objectives of Standard I.

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STANDARD 1020-02 **The students will develop observation skills vital to looking at and discussing aesthetic form by telling how colors seem warm or cool, by pointing out the effects of black and white on other colors, and by exhibiting a basic understanding of the color wheel. (Observer/Listener)**

OBJECTIVES

1020-0201. Point out contrasts (black and white) in an art print and ways in which they reinforce and brighten colors. (68)

1020-0202. Distinguish colors as warm or cool. (71)

1020-0203. Point out the use of secondary and tertiary colors in an art print. (72)

STANDARD 1020-03 **The students will develop skills vital to analyzing and evaluating works of art and the artists who produced them by telling how elements relate to parts of a composition, discussing the effects of warm and cool colors, and by identifying characteristics of the work or style of five new artists. (Critic)**

OBJECTIVES

1020-0301. Point out where the artist used one or more elements to relate parts of a composition to each other in an art print; e.g., by repeating a color or texture or by overlapping. (69)

1020-0302. Discuss the effects of warm and cool colors in a work of art. (71)

1020-0303. Identify a characteristic of the work or style of Brueghel, Chagall, Gainsborough, Rouseau, and Millet.

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VISUAL ARTS COMPONENT LEVEL 3

VA LEVEL 3

SIS NUMBER: 1030
SIS CODE: AR

CORE STANDARDS OF THE COURSE

STANDARD 1030-01 **The students will develop skills vital to making art by creating drawings that illustrate an understanding of unity, simple perspective concepts, cast shadows, and strategies for starting a picture. (Students' products may range from realistic to abstract application of the objectives.) (Participant)**

OBJECTIVES

1030-0101. Create the appearance of depth by drawing objects smaller as they get farther away. (76)

1030-0102. Illustrate how cast shadows fall away from the light source. (82)

1030-0103. Use a pair of complementary colors, plus their tints or shades to create a design in which one hue is dominant. (93)

1030-0104. Draw distant objects more flat and with less detail. (89)

1030-0105. Draw a picture in which the relative sizes of different subjects and their parts are represented. (92)

1030-0106. Produce a three-dimensional form and give attention to every possible view; i.e., top, bottom, and inside. (95)

1030-0107. Begin a drawing with methods such as blocking in, simplifying as stick figures, and drawing the action.

1030-0108. Use a variety of media and materials in implementing the objectives of Standard I.

STANDARD 1030-02 **The students will develop observation skills vital to looking at and discussing aesthetic form by demonstrating an understanding of how function influences design, how artists organize space, and how colors may be used to create contrast and optical weight. (Observer/Listener)**

OBJECTIVES

1030-0201. Describe two or more ways that all of the space in an arrangement (art print) has been used. (77)

1030-0202. Describe how the function of an object influenced its form; i.e., an airplane's function influences its shape. (87)

1030-0203. Point to an example of a dominant hue in an art print or an advertisement. (94)

1030-0204. Point out an example of one color being more prominent than another in a picture; i.e., brighter, darker, or larger in area. (94)

1030-0205. Indicate parts of a picture in which objects that contrast with their backgrounds have more visual weight than those that blend with their backgrounds. (96)

1030-0206. Identify common objects whose forms resemble the cone, cube, cylinder, sphere, or pyramid. (88)

STANDARD 1030-03 **The students will develop skills vital to analyzing and evaluating works of art and studying the artists who produced them by pointing out the use of contrast and focal points in an art print and identifying characteristics of the work or style of five new artists. (Critic)**

OBJECTIVES

1030-0301. Compare ways in which artists have used contrast to create focal points. (74)

1030-0302. Describe how contrast between a subject and its background makes one of them seem closer to the viewer. (75)

1030-0303. Identify a characteristic of the work or style of Morrisot, Harnett, Picasso, Rembrandt, and Seurat.

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MUSIC

MUSIC COMPONENT

The basic role of music should be the aesthetic and musical development of the individual. Music is a medium for the educational development of the student and should provide opportunity for individual growth and positive recognition. Music performance is also a medium for the educational development of the student and may be used for the purpose of strengthening public relations and providing entertainment in the community.

Experiences in music should provide a conceptual understanding of the basic properties of melody, harmony, timbre, dynamics, and form. If music is to achieve its basic role, there must be a well-balanced, sequential course of study. In addition to extensive, creative, and recreative opportunities that develop a functional understanding of music, there should also be experiences in listening, structural analysis, theory, and historical understanding of cultural development resulting in aesthetic appreciation.

Mastery of the music core is achieved when the student understands the concepts and demonstrates the skills contained in one level sufficiently to move to the next level. Please note that the core does not constitute the entire course at any level. It represents only the essential requirements that every student should master. Additional concepts and skills in music should be part of the music program in every grade level and course.

MUSIC COMPONENT LEVEL K

MU LEVEL K

SIS NUMBER: 1500
SIS CODE: AR

COURSE DESCRIPTION (Levels K-3)

The music program in the primary grades is designed for students to develop their musical awareness, interests, potentials, and appreciation. Experiences will include singing songs, both by rote and through musical notation; listening to music, both recorded and live; playing simple classroom melodic and percussion instruments; creating simple melodies for singing or playing on classroom instruments; and moving expressively to music.

CORE STANDARDS OF THE COURSE

STANDARD 1500-01	**The students will develop vocal techniques and skills related to singing a variety of songs in a natural voice. (Participant)**

OBJECTIVES

1500-0101. Sing with a voice that is natural and produced without strain.

1500-0102. Sing a variety of songs including action songs and singing games.

1500-0103. Sing simple tonal patterns in echo to the teacher.

STANDARD 1500-02	**The students will develop techniques and skills related to playing simple percussion instruments. (Participant)**

OBJECTIVES

1500-0201. Clap, march, or play simple percussion instruments to the beat of songs, chants, or nursery rhymes.

1500-0202. Play simple percussion instruments and demonstrate how sounds are produced on each one.

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STANDARD 1500-03	**The students will develop listening techniques and skills involved in identifying rhythm, melody, dynamics, form, and musical instruments. (Observer/Listener, Critic)**

OBJECTIVES

1500-0301. Identify the beat in familiar songs.

1500-0302. Discriminate between loud-soft, fast-slow, long-short, and sound-silence.

1500-0303. Discriminate between high-low and up-down.

1500-0304. Identify when a melody moves up or down or stays the same.

1500-0305. Identify rhythmic phrases as being the same or different.

1500-0306. Identify classroom rhythm and melody instruments; e.g., rhythm sticks, triangles, sand blocks, xylophones.

1500-0307. Become familiar with at least one composition of each of the following composers:

Camille Saint Saens (Example: "Carnival of the Animals");
Robert Schumann (Example: "Wild Horseman" and "Happy Farmer");
Nikolai Rimsky Korsakov (Example: "Flight of the Bumblebee").

STANDARD 1500-04	**The students will identify music as a language. (Participant, Critic)**

OBJECTIVES

1500-0401. Recognize that sounds can be represented by pictures, geometric shapes, or other symbols.

STANDARD 1500-05	**The students will create simple movement and rhythmic patterns. (Participant, Observer/Listener)**

OBJECTIVES

1500-0501. Express, through movement, the rhythms of nature, the movements of the animal kingdom, and the activities of their own special world.

1500-0502. Create simple rhythmic patterns using the voice or percussion instruments.

MUSIC COMPONENT LEVEL 1

MU LEVEL 1

SIS NUMBER: 1510
SIS CODE: AR

CORE STANDARDS OF THE COURSE

STANDARD 1510-01	**The students will develop vocal techniques and skills related to singing a variety of songs in a comfortable range. (Participant)**

OBJECTIVES

1510-0101. Sing with an awareness of pitch, using a voice that is natural and produced without strain within a comfortable range.

1510-0102. Sing a variety of songs including action songs, folk songs, and singing games.

1510-0103. Sing tonal patterns in echo to the teacher.

STANDARD 1510-02	**The students will develop techniques and skills related to playing simple percussion and melodic instruments. (Participant)**

OBJECTIVES

1510-0201. Perform rhythmic patterns in 2s and 3s by clapping, stepping, or playing percussion instruments in echo to the teacher.

1510-0202. Play simple percussion and melodic instruments and demonstrate how sounds are produced on each one.

STANDARD 1510-03	**The students will develop listening techniques and skills involved in identifying rhythm, melody, dynamics, form, and musical instruments. (Observer/Listener, Critic)**

OBJECTIVES

1510-0301. Identify the beat in familiar songs.

1510-0302. Discriminate between loud-soft, fast-slow, long-short, and sound-silence in a musical context.

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1510-0303. Identify when a melody moves up or down or stays the same.

1510-0304. Identify melodic or rhythmic phrases as being the same or different.

1510-0305. Identify violin, flute, trumpet, trombone, snare drum, piano, and guitar.

1510-0306. Become familiar with at least one composition of each of the following composers:

Sergei Prokofiev (Example: "March from the Love for Three Oranges");
Franz Joseph Haydn (Example: "Theme and Variations from Surprise Symphony");
Peter Ilyitch Tchaikovsky (Example: "Nutcracker Suite").

STANDARD 1510-04	**The students will identify and use some musical symbols and terms. (Participant, Critic)**

OBJECTIVES

1510-0401. Identify and understand music symbols, terms, and signs which include piano (p), pianissimo (pp), forte (f), fortissimo (ff), beat, composer, rest, and melody.

1510-0402. Interpret pictures, geometric shapes, or other symbols into sounds.

STANDARD 1510-05	**The students will create simple movement, rhythmic, and melodic patterns. (Participant, Observer/Listener)**

OBJECTIVES

1510-0501. Show through movement the mood (sad-happy), rhythm (even-uneven), melody (high-low), and tempo (fast-slow) of a simple piece of music.

1510-0502. Create simple rhythmic and melodic patterns using the voice or musical instruments.

MUSIC COMPONENT LEVEL 2

MU LEVEL 2

SIS NUMBER: 1520
SIS CODE: AR

CORE STANDARDS OF THE COURSE

STANDARD 1520-01	**The students will develop vocal techniques and skills related to singing a variety of songs on pitch. (Participant)**

OBJECTIVES

1520-0101. Sing on pitch, using a voice that is natural and produced without strain within a comfortable range.

1520-0102. Sing a variety of songs including folk, patriotic, and singing games.

1520-0103. Sing tonal patterns in echo to the teacher.

STANDARD 1520-02	**The students will develop techniques and skills related to playing simple rhythmic and melodic instruments, and use them to accompany musical selections. (Participant)**

OBJECTIVES

1520-0201. Perform rhythmic patterns in 2s and 3s by clapping, stepping, or playing percussion instruments in echo to the teacher.

1520-0202. Play rhythmic and melodic instruments to accompany musical selections.

STANDARD 1520-03	**The students will develop listening techniques and related skills involved in identifying rhythm, melody, dynamics, form, mood, and musical instruments. (Observer/ Listener, Critic)**

OBJECTIVES

1520-0301. Identify the beat in patterns of 2s, and 3s in familiar songs.

1520-0302. Identify when a melody stays the same, moves by steps, or skips.

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1520-0304. Describe how dynamics and tempo contribute to the mood of a piece.

1520-0305. Identify viola, string bass, tuba, bassoon, cymbals, clarinet, and bass drum.

1520-0306. Become familiar with at least one composition of each of the following composers:

Maurice Ravel (Example: "Mother Goose Suite");
Ferde Grofe (Example: "Grand Canyon Suite");
Richard Rodgers (Example: "The March of the Siamese Children from the King and I").

STANDARD 1520-04	**The students will identify musical symbols and terms and use simple tonal patterns. (Participant, Critic)**

OBJECTIVES

1520-0401. Identify and understand music symbols, terms, and signs which include melodic pattern, rhythmic pattern, form, dynamics, crescendo (<), decrescendo (>), tempo, mezzo piano (mp), and mezzo forte (mf).

1520-0402. Identify the notes in a simple tonal pattern using syllables, numbers, and/or letter names.

STANDARD 1520-05	**The students will respond to music with appropriate body movements and create melodies. (Participant, Observer/Listener)**

OBJECTIVES

1520-0501. Respond with appropriate body movements to melody, rhythm, phrasing, dynamics, and tempo.

1520-0502. Create melodies for simple rhymes or other forms of poetry using the voice or musical instruments.

MUSIC COMPONENT LEVEL 3

MU LEVEL 3

SIS NUMBER: 1530
SIS CODE: AR

CORE STANDARDS OF THE COURSE

STANDARD 1530-01	**The students will develop vocal techniques and skills related to singing a variety of songs including chants and two-part rounds. (Participant)**

OBJECTIVES

1530-0101. Sing on pitch producing a pleasing tone, using correct posture and proper breathing habits.

1530-0102. Sing a variety of songs including folk, patriotic, seasonal, and singing games.

1530-0103. Sing chants to simple songs and two-part rounds.

STANDARD 1530-02	**The students will develop techniques and skills related to playing a variety of rhythmic and melodic instruments. (Participant)**

OBJECTIVES

1530-0201. Perform rhythmic patterns in 2/4 and 3/4 time on melody and/or percussion instruments.

1530-0202. Play a variety of classroom instruments including tone bells.

STANDARD 1530-03	**The students will develop listening techniques and skills involved in identifying rhythm, melody, dynamics, form, mood, and groups of musical instruments. (Observer/ Listener, Critic)**

OBJECTIVES

1530-0301. Identify accent and meter in familiar songs.

1530-0302. Identify when a melody stays the same, moves by steps, or skips.

1530-0303. Identify two-part (AB) and three-part (ABA) musical forms.

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1530-0304. Identify mood, tempo, and dynamics while listening to various types of music.

1530-0305. Classify orchestral instruments into groups of strings, woodwinds, brass, and percussion; and identify cello, oboe, and French horn.

1530-0306. Become familiar with at least one composition of each of the following composers:

Edvard Grieg (Example: "Peer Gynt Suite");
Englebert Humperdinck (Example: "Hansel and Gretel Overture");
Kenneth J. Alford (Example: "Colonel Bogey March").

STANDARD 1530-04 **The students will identify musical language including sound/symbol relationships in simple melodies. (Participant, Critic)**

OBJECTIVES

1530-0401. Identify and understand music symbols, terms, and signs which include accent, mood, meter, whole note, half note, quarter note, eighth note, whole rest, half rest, quarter rest, eighth rest, staff, treble clef, bar line, and measure.

1530-0402. Identify the notes of a simple melody, using syllables, numbers, and/or letter names.

STANDARD 1530-05 **The students will respond to music with appropriate body movements, as well as create accompaniments to melodies. (Participant, Observer/Listener)**

OBJECTIVES

1530-0501. Respond to beat, accent, rhythm, pattern, and changing meters through movement and dance.

1530-0502. Create simple accompaniments to melodies using the voice or musical instruments.

DRAMA

DRAMA

LEVELS K-3 (PART OF LANGUAGE ARTS CORE)

LEVEL K

STANDARD 4000-08 **The students will learn about and experience the techniques of drama. (DRAMA: Participant, Observer/ Listener, Critic)**

OBJECTIVES

4000-0801. Role-play experiences with each of the five senses; e.g., smelling a flower, hearing a train.

4000-0802. Express real or imaginary ideas through playacting.

4000-0803. Demonstrate an awareness of personal space.

4000-0804. Retell the sequence of events in a simple play or story.

4000-0805. Demonstrate appropriate behavior when viewing and listening to a performance.

4000-0806. Produce simple sound effects for stories or plays.

LEVEL 1

STANDARD 4010-08 **The students will learn about and experience the techniques of drama. (DRAMA: Participant, Observer/ Listener, Critic)**

OBJECTIVES

4010-0801. Improvise experiences with each of the five senses to interpret various environments; e.g., seashore, woods, city street.

4010-0802. Memorize and recite short selections.

4010-0803. Participate in choral speaking.

4010-0804. Demonstrate different ways the body and its parts can move, such as pushing/pulling, reaching/bending, lifting/dropping, etc.

4010-0805. Use the face, voice, and body to express emotions; e.g., happiness,

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4010-0805. Use the face, voice, and body to express emotions; e.g., happiness, surprise, fear.

4010-0806. Role-play a simple character through actions.

4010-0807. Demonstrate appropriate behavior when viewing and listening to a performance.

4010-0808. Use simple props for stories or plays.

LEVEL 2

STANDARD 4020-08	**The students will learn about and experience the techniques of drama. (DRAMA: Participant, Observer/ Listener, Critic)**

OBJECTIVES

4020-0801. Pantomime the use of each of the senses; e.g., tasting a lemon, touching a hot plate, hearing a loud noise.

4020-0802. Improvise a scene or story with others.

4020-0803. Speak before a group of peers; e.g., Show and Tell.

4020-0804. Improvise body movements in response to pictures, sounds, music, stories, etc.

4020-0805. Improvise dialogue in response to pictures, sounds, music, or stories, etc.

4020-0806. Develop a dialogue and actions appropriate for characters in a story or play.

4020-0807. Demonstrate appropriate behavior when listening to and viewing a performance by peers or others.

4020-0808. Create and operate a puppet (e.g., paper sack, sock, finger) to represent a given character.

LEVEL 3

STANDARD 4030-08	**The students will learn about and experience the techniques of drama. (DRAMA: Participant, Observer/ Listener, Critic)**

OBJECTIVES

4030-0801. Participate in a group improvisation of a story.

4030-0802. Stay in character in a short play or skit.

4030-0803. Speak expressively in a choral or storytelling situation.

4030-0804. Describe the feelings portrayed in a given picture or situation.

4030-0805. Identify the setting, plot, and characters in a simple play or story.

4030-0806. Demonstrate and discuss appropriate behavior when viewing a performance.

4030-0807. Give personal reactions after viewing a performance.

4030-0808. Make and/or use simple props or costumes to help portray a character.

DANCE

DANCE

LEVELS K-3 (Part of Responsible Healthy Lifestyles Core)

LEVEL K

STANDARD 7500-05 **The students will express feelings by observing and participating in introductory rhythm and dance movements that include time, space, energy, and shape. (DANCE: Participant, Observer/Listener, and Critic)**

OBJECTIVES

7500-0501. Clap and move to the beat of various tempos (slow, medium, and fast).

7500-0502. Clap and move to simple rhythmic patterns based on such things as the syllables of names or other words.

7500-0503. Create curved, straight, bent, and twisted shapes with the body.

7500-0504. Express through motion such things as textures, senses, and emotions. (To stimulate exploration, the teacher might use words such as sad, happy, noisy, quiet, rough, smooth, etc.)

LEVEL 1

STANDARD 7510-05 **The students will continue to express feelings by observing and participating in introductory rhythm and dance movements that include time, space, energy, and shape. (DANCE: Participant, Observer/Listener, Critic)**

OBJECTIVES

7510-0501. Clap and move, accenting the first beat of every measure in 4/4 time.

7510-0502. Clap and move to simple rhythmic patterns based on such things as phrases or whole sentences.

7510-0503. Create symmetrical (in which the two sides look alike) and asymmetrical (in which the two sides do not look alike) shapes with the body.

7510-0504. Through movement, explore over/under, above/below, near/far, in front/behind, inside/outside, and around/through.

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7510-0505. Move through space in various directions; e.g., walking, running, leaping, hopping, jumping, skipping, galloping, and sliding.

7510-0506. Improvise a sequence of energy (motion) changes; i.e., moving from lyrical (floating, gliding) to percussive (sharp, quick).

7510-0507. Perform traditional and creative singing games and dances or create simple group dances using basic locomotor steps. (Games and dances might include "Bear Growl," "Statue Games," "Jolly is the Miller," "Muffin Man," etc.)

7510-0508. Express the feelings generated after observing a dance (live, film, or video); i.e., mood, patterns, and movement.

LEVEL 2

STANDARD 7520-0 5 **The students will express feelings by observing a dance performance and combine introductory rhythm and dance movements that include time, space, energy, and shape. (DANCE: Participant, Observer/Listener, Critic)**

OBJECTIVES

7520-0501. Express beat and rhythm patterns by clapping and moving body parts; i.e., accenting the first beat of a metric phrase, moving to a patterned verse.

7520-0502. Explore symmetrical and asymmetrical shapes with the body, alternating from one to the other, and move through space changing the level of the body.

7520-0503. Improvise a sequence of energy changes; i.e., moving from lyrical (floating, gliding) to percussive (sharp, quick).

7520-0504. Create new and unusual solutions to walking from here to there, changing direction, speed, size, sound, level, shape, or rhythm.

7520-0505. Perform traditional and creative singing games and dances such as "Round and Round The Village," "Bingo," "Here We Go Round the Mountain."

7520-0506. Express feelings generated by observing a dance performance--describing the impressions it creates and discussing what the choreographer wants the audience to think or feel.

LEVEL 3

STANDARD 7530-05	**The students will create simple dances and discuss reasons for dance, combine introductory rhythm and dance movements that include time, space, energy, and shape. (DANCE: Participant, Observer/Listener, Critic)**

OBJECTIVES

7530-0501. Clap and move in 6/8 time, accenting the first beat of every measure, changing the body part, the direction, the level, or the energy.

7530-0502. Move appropriately to a piece of 4/4 music or to a steady beat; e.g., slowly to half notes, moderately to quarter notes, and quickly to eighth notes.

7530-0503. Discuss and express through movement the rhythms found in: (a) nature; e.g., wind, sea, and trees; (b) the body; e.g., breath, pulse, sneeze and tickle; (c) mechanical and nonmechanical objects; e.g., ball, feather, and eggbeater.

7530-0504. Create a series of shapes on different levels (low, medium, and high) and design transitions between them; e.g., slow-motion and sustained, sudden or percussive.

7530-0505. Improvise a sequence of energy changes such as percussive, sustained, lyrical, collapsing, and swinging and relate these energy changes to another curriculum area such as science.

7530-0506. Perform traditional and creative singing games or create a simple group dance based on a theme. The dance should include a beginning, middle, and end. (Games and dances might include: "Skip To My Lou," "Digga Doe," "Jim Along Josie," etc.)

7530-0507. Discuss why people dance and how this art form is used as a kind of nonverbal communication.

Information Technology

INTRODUCTION

The following core standards and objectives are written to allow each student to function effectively in the technological society as a competent, productive, caring, and responsible citizen.

The curriculum is written with the realization that significant effort may be necessary to fulfill the objectives. Not all schools will have sufficient hardware and software nor adequately-trained teachers. It is expected that schools will plan and initiate steps to reach a position where these standards and objectives can be fully implemented. Inservice training is essential to fully prepare teachers to competently convey the entire curriculum.

These standards are intended not only to teach information technology but to apply technology across the curriculum. The greatest educational success will come when technology reaches into all content areas. Many of the information technology objectives can be taught and mastered in other curriculum areas.

A keyboarding standard has been included for the first time in this curriculum. It is recommended that keyboarding first be taught as a concentrated course in third grade and reviewed in each succeeding grade to allow students to achieve a high degree of proficiency. Only when keyboarding skills improve will students become more productive in the use of computer applications.

The next page shows a scope and sequence for the Information Technology Core. The same standards are used at each grade level with similar objectives of increasing difficulty. The objectives listed on the scope and sequence chart are generalized from the numbered objectives appearing at each grade level in the core curriculum. Any objectives may be introduced earlier than specified grade level depending upon teachers' skills and students' readiness.

K-12 SCOPE AND SEQUENCE

The following section provides a scope and sequence of the entire Information Technology Curriculum. Such an overview should assist educators in appreciating the mastery expected at other grade levels and the importance of their grade level's objectives.

	STANDARD 1	STANDARD 2	STANDARD 3	STANDARD 4	STANDARD 5
	Students will use each component of a computer (technology) system correctly.	Students will demonstrate proper keyboarding techniques.	Students will understand the major social and ethical issues in the field of information technology.	Students will use application software to accomplish a variety of tasks.	Students will use technology to develop problem-solving skills.
OBJECTIVES	Demonstrate the appropriate procedures for turning a system on, running a program, and turning it off. Identify system input, output, and storage devices. Demonstrate the appropriate use of system input, output, and storage devices. Demonstrate basic care of a computer system, both hardware and software.	Demonstrate proper finger position on the home keys. Demonstrate proper finger movement and placement to type each letter of the alphabet. Develop keyboarding skills and increase typing speed by 5 words per minute per year.	Identify the changes that information technologies have made in the world society. Identify the changes that could occur in the future due to advances in information technologies. Identify the individual rights of information technology users and the need for protecting those rights. Identify careers using technology.	Use a word processor to produce a document. Use a data base to store and retrieve information. Use a spreadsheet to analyze numerical data, performing at least two calculations. Create and/or use computer graphics to enhance a document or produce a product. Use desk-top publishing to lay out and print a document. Observe and/or demonstrate the use of telecommunications to access information and to communicate with others. Identify and/or use other state-of-the-art technologies.	Identify the kinds of problems which can best be solved using a computer. Use problem-solving software to develop logical thinking skills; i.e., modeling, factual, and theoretical simulations. Demonstrate a procedural or sequential problem-solving process. Explain and/or demonstrate that a human being creates a set of instructions (in a computer language) which causes a computer to solve a problem. Explain that a computer is a problem-solving tool worthy of further study and use in a variety of life-long situations.

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INFORMATION TECHNOLOGY STUDIES

LEVEL K

SIS NUMBER: 2000
SIS CODE: IT

COURSE DESCRIPTION (Level K)

The information technology studies in Level K introduce the students to basic components of a computer system including the position of the keys on a keyboard, proper conduct around computers, and appropriate age-level software.

CORE STANDARDS OF THE COURSE

STANDARD 2000-01	**The students will use each component of a computer (technology) system correctly.**

OBJECTIVES

2000-0101. Run age-appropriate software.

2000-0102. Identify computer hardware such as monitor, keyboard, and disk drive.

2000-0103. Identify principles of basic computer care and preservation.

STANDARD 2000-02	**The students will demonstrate proper keyboarding techniques.**

OBJECTIVES

2000-0201. Identify letters of the alphabet on the keyboard.

2000-0202. Identify right-hand and left-hand sides of the keyboard.

2000-0203. Demonstrate the use of the space bar and RETURN/ENTER keys.

STANDARD 2000-03	**The students will understand the major social and ethical issues in the field of information technology.**

OBJECTIVES

2000-0301. Demonstrate appropriate conduct during computer work periods.

STANDARD 2000-04	The students will use application software to accomplish a variety of tasks.

THIS STANDARD DOES NOT APPLY AT THIS GRADE LEVEL

STANDARD 2000-05	The students will use technology to develop problem-solving skills.

OBJECTIVES

2000-0501. Use appropriate grade level simulation and problem-solving software.

INFORMATION TECHNOLOGY STUDIES LEVEL 1

SIS NUMBER: 2010
SIS CODE: IT

COURSE DESCRIPTION

The information technology studies in Level 1 continue the introduction of basic components of a computer system, proper conduct around computers, and appropriate age-level software as begun in Level K.

CORE STANDARDS OF THE COURSE

STANDARD 2010-01	**The students will use each component of a computer (technology) system correctly.**

OBJECTIVES

2010-0101. Demonstrate proper start-up and termination procedures for a software package.

2010-0102. Identify major hardware components of specific technologies being used in the classroom/lab.

2010-0103. Demonstrate the proper handling of diskettes.

2010-0104. Identify potential abuses to and proper care of hardware.

STANDARD 2010-02	**The students will demonstrate proper keyboarding techniques.**

OBJECTIVES

2010-0201. Identify which keys are specific to the right-hand and left-hand sides of the keyboard.

2010-0202. Enter simple words using "hunt and peck" method while maintaining right-hand and left-hand keyboard orientation.

2010-0203. Use specialized computer keys such as ESCAPE, CONTROL, and basic FUNCTION keys. (Function keys include ALT and "F#" keys on MS-DOS computers, open-apple, closed-apple, and option keys on apple computers.)

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STANDARD 2010-03	**The students will understand the major social and ethical issues in the field of information technology.**

OBJECTIVES

2010-0301. Demonstrate appropriate conduct during technology work periods.

STANDARD 2010-04	**The students will use application software to accomplish a variety of tasks.**

THIS STANDARD DOES NOT APPLY AT THIS GRADE LEVEL.

STANDARD 2010-05	**The students will use technology to develop problem-solving skills.**

OBJECTIVES

2010-0501. Use appropriate grade level simulation and problem-solving software.

2010-0502. Relate computer use to real-life, problem-solving situations at the level of the student's understanding.

2010-0503. Put into proper sequence the given steps of a familiar procedure. (Can be a non-computer procedure.)

INFORMATION TECHNOLOGY STUDIES LEVEL 2

SIS NUMBER: 2020
SIS CODE: IT

COURSE DESCRIPTION

The information technology studies in Level 2 introduce input and output devices, HOME ROW keys of the keyboard, and beginning problem solving and sequencing.

CORE STANDARDS OF THE COURSE

STANDARD 2020-01 **The students will use each component of a computer (technology) system correctly.**

OBJECTIVES

2020-0101. Demonstrate the proper procedures for start up of a hardware system.

2020-0102. Identify input, output, and storage devices.

2020-0103. Demonstrate the appropriate use of system input, output, and storage devices.

2020-0104. Identify potential hazards to and proper care of software.

STANDARD 2020-02 **The students will demonstrate proper keyboarding techniques.**

OBJECTIVES

2020-0201. Demonstrate proper finger position on **HOME ROW** keys.

2020-0202. Demonstrate correct posture and proper stroking on **HOME ROW** keys.

2020-0203. Keyboard simple sentences. (Students may look at keyboard when necessary, especially for non-HOME ROW keys.)

STANDARD 2020-03	**The students will understand the major social and ethical issues in the field of information technology.**

OBJECTIVES

2020-0301. Demonstrate appropriate conduct during technology work periods.

STANDARD 2020-04	**The students will use application software to accomplish a variety of tasks.**

THIS STANDARD DOES NOT APPLY AT THIS GRADE LEVEL.

STANDARD 2020-05	**The students will use technology to develop problem-solving skills.**

OBJECTIVES

2020-0501. Use appropriate grade level simulation and problem-solving software.

2020-0502. Relate computer use to real-life, problem-solving situations at the level of the student's understanding.

2020-0503. Identify and put into proper sequence the steps of a familiar procedure.

INFORMATION TECHNOLOGY STUDIES LEVEL 3

SIS NUMBER: 2030
SIS CODE: IT

COURSE DESCRIPTION

The information technology studies in Level 3 concentrate on keyboarding skills to make time spent at a computer more productive. Community services which use a computer are discussed. A word processor (software package) and more problem-solving skills are introduced.

CORE STANDARDS OF THE COURSE

STANDARD 2030-01	**The students will use each component of a computer (technology) system correctly.**

OBJECTIVES

2030-0101. Identify input, output, and disk storage devices and state their uses. (Be sure to include a mouse and joystick as input devices.)

2030-0102. Identify and avoid potential hazards to equipment operation such as magnetic fields, dirt, dust, heat, smoke, moisture, and abuse.

STANDARD 2030-02	**The students will demonstrate proper keyboarding techniques.**

OBJECTIVES

2030-0201. Demonstrate proper stroking technique for each letter of the alphabet.

2030-0202. Identify proper usage of SHIFT keys.

2030-0203. Keyboard word lists and sentences using correct posture and proper stroking.

STANDARD 2030-03	**The students will understand the major social and ethical issues in the field of information technology.**

OBJECTIVES

2030-0301. Demonstrate appropriate conduct during technology work periods.

2030-0302. Identify services in the community which utilize computers.

STANDARD 2030-04 **The students will use application software to accomplish a variety of tasks.**

OBJECTIVES

2030-0401. Create a word processing file containing sentences.

2030-0402. Demonstrate proper letter/word deletion techniques on a word processor.

STANDARD 2030-05 **The students will use technology to develop problem-solving skills.**

OBJECTIVES

2030-0501. Use appropriate grade level simulation and problem-solving software.

2030-0502. Relate computer use to real-life, problem-solving situations at the level of the student's understanding.

2030-0503. Identify and put into proper sequence the steps of a familiar procedure.

2030-0504. Participate in a demonstration of the computer's ability to do repetitive, large tasks with speed and accuracy.

Language Arts

LANGUAGE ARTS

The purpose of the language arts core is to help students attain language skills that generate and communicate thinking. The core is the basic portion of the language arts curriculum required for all students and should be supplemented by the teacher. It is designed to provide students with maximum career opportunities and advancements, as well as provide a solid foundation for further education. The rationale for this document is based on research and represents a shift of emphasis from teaching isolated content and skills to a process-oriented program.

In Levels K through 8, drama is included as a component of the language arts core. The core in drama should develop students' abilities in each of three roles -- participant, observer/listener, and critic. These roles are distinct, yet complementary. Students' education is limited if they master only one role; furthermore, each role requires a set of distinct skills which taken by itself is limited. When these skills are integrated, they provide the necessary and complete background for informed response in drama. In this portion of the core, students will take the participant and critical roles in drama in addition to the traditional observer/listener role. Students will participate in dramatic presentations, read, see, and hear other presentations, and evaluate them.

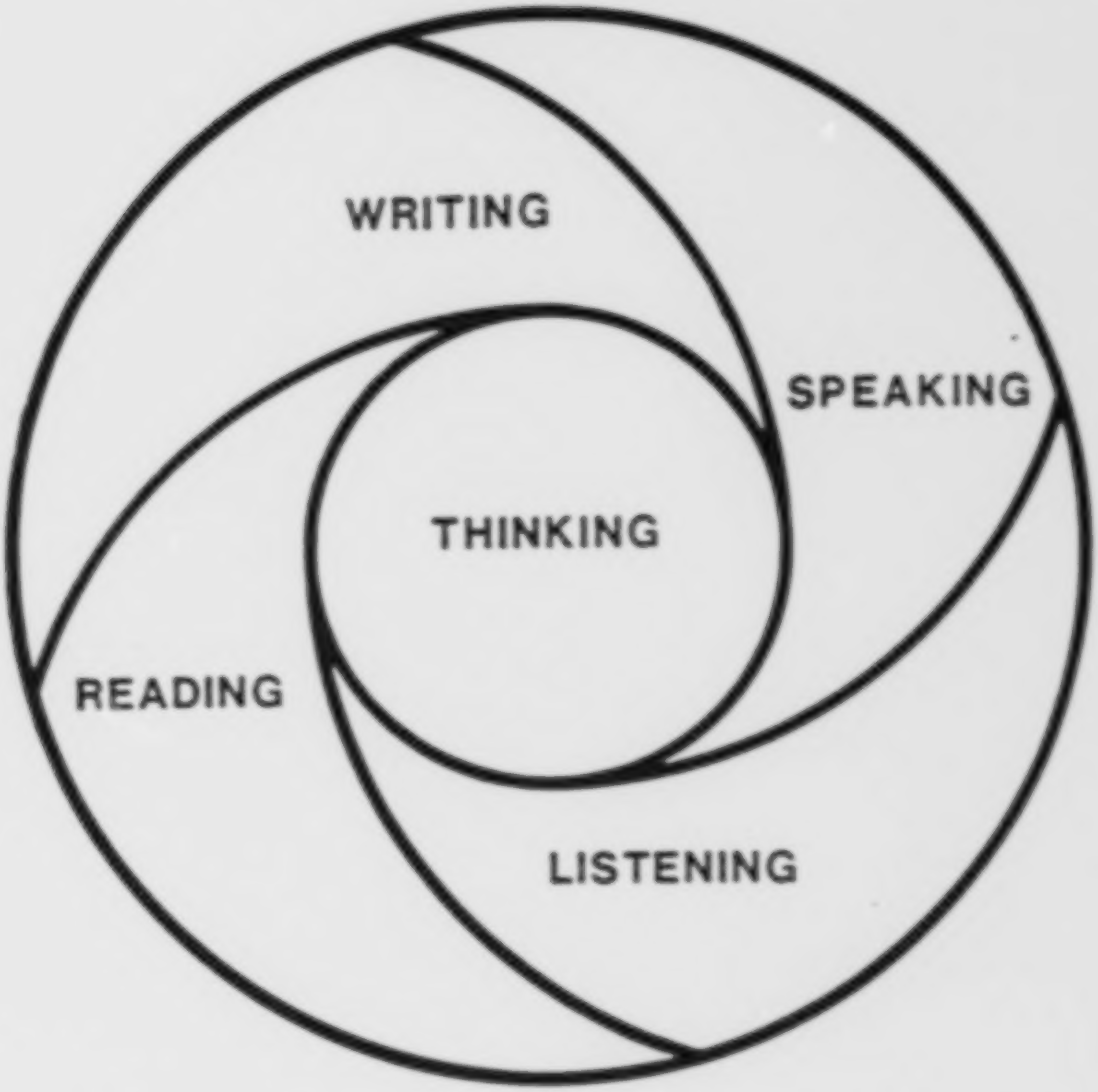
Rationale:

1. Thinking, reading, writing, speaking, and listening, all interrelated processes, are the core of the curriculum. They are also the most basic of all the skills.

   These activities represent an integrated whole, parts of which are experienced in isolation, but which generally interrelate and act in concert. The thinking process is concerned with advancing levels of abstraction, maximizing concentration, focusing random knowledge, and synthesizing data into logical, coherent trains of thought. The speaking and listening processes focus and communicate thoughts. The reading and writing processes further refine thinking and communication. (Often, the writing process, which includes pre-writing, writing, responding, reviewing, editing, evaluation, and sharing, is the most substantive proof of learning.) Together, these processes are the foundations of all learning and humanity.

   Research continually demonstrates (e.g., Odell and Goswami, 1983) that the average job requires workers to spend 70 percent of their time productively reading, writing, speaking, and listening. If thinking is added to the list, the figure will approach 100 percent in some occupations. Obviously, the most important career preparation we can give students is to develop these skills.

2. Language skills cannot be productively taught in isolation, particularly through the insular study of traditional, structural, or transformational grammar. Students need daily opportunities to develop related language skills. Students


WRITING
SPEAKING
THINKING
READING
LISTENING

develop skills by practicing them, but no skill or individual content material should be practiced in isolation. Spelling, mechanics, usage, and vocabulary study should generally be derived from and related to the literature selections and students' writing (Hillocks, 1984).

Traditionally, mechanics and usage have been taught for their own sake, apart from reading and writing. Research shows that mechanics, usage, spelling, and vocabulary are important as content when they are taught as an integral part of the writing process (Cooper, 1974; Cooper, 1983; Odell, 1974). When in the revising or editing stages, the need for correct usage, spelling, and mechanics emerges, the necessary skill can then be productively taught (Emig, 1971).

The instruction of formal grammar, unless directly related with the writing, reading, and speaking processes, does not help students develop communication skills. Furthermore, researchers have incontrovertibly concluded that in programs in which excessive time is devoted to the study of grammar, independent of the reading and writing processes, the effects are negative. It may be helpful for students to have a knowledge of grammatical terminology when it is taught in the context of their own writing, reading, and speaking. In the words of William Irmsher, past-president of the National Council of Teachers of English, "Few grammarians are writers, but all writers are grammarians." In summary, skill attainment through process is paramount, content is secondary.

3. Language skills stretch across all mastery levels and subject areas. The teaching of effective language skills is a shared responsibility, involving all teachers in all subject areas, administrators, and parents. These skills are taught, reinforced, and expanded repeatedly through all subject areas.

4. In general, the developmental sequence of language skills is:

   Fluency ---- Detail ---- Abstractions.

   Students must be able to produce and comprehend ample amounts of language before detail can be effectively taught. Then students must learn to articulate and comprehend specific language before tackling abstractions in language. That is, when learning to write, students must first produce several paragraphs before moving to specific language that brings writing to life. From concrete, vivid language, the students can then go forward to language that has no physical referent (e.g., truth, justice, freedom) and employs calculated rhetorical strategies, including logic.

   Although development of language skills is a lifelong process, students can demonstrate appropriate progress for each grade level.

George Hillocks, Jr. "What Works in Teaching Composition: A Meta-analysis of Experimental Treatment Students." American Journal of Education, Vol. 93 (November, 1984), 1, 133-170.

Charles R. Cooper, "Research Roundup: Oral and Written Composition," *English Journal*, Vol. 63 (September, 1974), 102

Charles R. Cooper, "Research Roundup: Oral and Written Composition," *English Journal*, Vol. 62 (November, 1973), 1,202.

Lee Odell, "Measuring the Effect of Instruction in Pre-Writing," *Research in the Teaching of English*, Vol. 8 (fall, 1974), 240.

Janet Emig, *The Composing Processes of Twelfth Graders*. Urbana, Illinois: National Council of Teachers of English, 1971, 98-99.

ENGLISH/LANGUAGE ARTS CORE CURRICULUM

Thinking, Reading, Writing, Speaking, and Listening Skills

SIS CODE: LA

Levels K-3

mastery

SIS CODE: LA

Levels 4-6

mastery

SIS CODE: LE

Levels 7-8

2.0 UNITS

mastery

SIS CODE: LE

Levels 9-12

3.0 UNITS

mastery

LANGUAGE ARTS LEVEL K

LA LEVEL K

SIS NUMBER: 4000
SIS CODE: LA

COURSE DESCRIPTION (Levels K-6)

The course of study for language arts will ensure that each student will have mastered the basic skills of listening, speaking, reading, spelling, and penmanship. Through oral and written language, students will develop and expand their concepts of themselves, people, places, and events in the world around them. Skills in drama emphasize the role of the student as a participant, observer/listener, and critic, as well as enriching the language arts.

CORE STANDARDS OF THE COURSE

STANDARD 4000-01 **The students will learn to attend to verbal information. (LISTENING)**

OBJECTIVES

4000-0101. Listen to the person who is speaking.

4000-0102. Follow one- and two-step directions.

4000-0103. Recall specific information.

4000-0104. Recall information in sequence.

4000-0105. Listen to literary selections read aloud.

STANDARD 4000-02 **The students will share their thoughts in speech, using vocabulary appropriate to age and situation. (SPEAKING)**

OBJECTIVES

4000-0201. Enunciate sounds so others can understand what is said.

4000-0202. Speak with the appropriate volume for the situation.

4000-0203. Recite correctly their name and telephone number.

4000-0204. Sing short songs and recite short poems from memory.

4000-0205. Report events in a sequential order.

4000-0206. Tell how things look, feel, sound, taste, and smell.

STANDARD 4000-03 **The students will learn the auditory and visual discrimination skills necessary to recognize letters and understand sound-symbol relationships. (READING)**

OBJECTIVES

4000-0301. Discriminate visual and auditory likenesses and differences.

4000-0302. Identify upper and lower case letters by name and by sound.

4000-0303. Demonstrate left-to-right, top-to-bottom, front-to-back, beginning-end orientation as related to print.

4000-0304. Ask questions about print; e.g., signs, labels, books.

4000-0305. Associate spoken words with written form.

STANDARD 4000-04 **The students will become familiar with different kinds of literature and respond creatively through art, music, drama, and dance. (LITERATURE)**

OBJECTIVES

4000-0401. Help select materials to be read aloud to them.

4000-0402. Respond to nursery rhymes, poems, stories, and picture books; e.g., draw a picture, sing a song, make simple puppets, and participate in role-playing.

STANDARD 4000-05 **The students will develop spelling readiness skills. (SPELLING)**

OBJECTIVES

4000-0501. Recognize that letters represent sounds in words.

4000-0502. Recognize that letters are arranged in left-to-right sequence to form words.

4000-0503. Recognize their name in print.

4000-0504. Spell their first name.

STANDARD 4000-06	**The students will print legibly, using the correct formation of the manuscript letters. (PENMANSHIP)**

OBJECTIVES

4000-0601. Write manuscript letters.

4000-0602. Write name.

4000-0603. Write digits 0 to 9.

STANDARD 4000-07	**The students will share their ideas and experiences in written form to be recorded by a scribe or themselves. (WRITTEN COMPOSITION)**

OBJECTIVES

4000-0701. Record or dictate words, sentences, stories, and experiences.

4000-0702. Share recorded events with others.

STANDARD 4000-08	**The students will learn about and experience the techniques of drama. (DRAMA: Participant, Observer/Listener, Critic)**

OBJECTIVES

4000-0801. Role-play experiences with each of the five senses; e.g., smelling a flower, hearing a train.

4000-0802. Express real or imaginary ideas through playacting.

4000-0803. Demonstrate an awareness of personal space.

4000-0804. Retell the sequence of events in a simple play or story.

4000-0805. Demonstrate appropriate behavior when viewing and listening to a performance.

4000-0806. Produce simple sound effects for stories or plays.

LANGUAGE ARTS LEVEL 1

LA LEVEL 1

SIS NUMBER: 4010
SIS CODE: LA

CORE STANDARDS OF THE COURSE

STANDARD 4010-01 **The students will listen to verbal information and demonstrate literal understanding. (LISTENING)**

OBJECTIVES

4010-0101. Listen to the person who is speaking.

4010-0102. Listen to information without interrupting.

4010-0103. Follow two- and three-step directions.

4010-0104. Recall specific information.

4010-0105. Recall information in sequence.

4010-0106. Demonstrate comprehension of literary selections read aloud.

STANDARD 4010-02 **The students will share their thoughts in speech, using vocabulary appropriate to age and situation. (SPEAKING)**

OBJECTIVES

4010-0201. Enunciate sounds so they can be understood.

4010-0202. Speak with the appropriate volume for the situation.

4010-0203. Recite their address correctly.

4010-0204. Sing songs and recite selected poems from memory.

4010-0205. Tell how things look, feel, sound, taste, and smell.

4010-0206. Answer questions accurately.

4010-0207. Ask questions to meet their needs.

4010-0208. Explain simple processes, activities, and experiences.

4010-0209. Stay on the topic when telling information or talking to others.

STANDARD 4010-03 **The students will use phonics and sight recognition to decode words. They will begin to develop comprehension skills. (READING)**

OBJECTIVES

4010-0301. Identify left-to-right, top-to-bottom, and front-to-back orientation as related to print.

4010-0302. Know consonant sounds, blends, and digraphs in all positions.

4010-0303. Know short and long vowel sounds as they appear in the reading scope and sequence.

4010-0304. Recognize appropriate phonograms (word families).

4010-0305. Use structural analysis to read contractions, compound words, singular and plural forms of words, and possessives on the students' level.

4010-0306. Read sight words and basal vocabulary as they appear in the reading program.

4010-0307. Comprehend word and sentence meaning in context.

4010-0308. Identify antonyms and synonyms on the students' instructional level.

4010-0309. Discriminate between a statement and a question.

4010-0310. Recognize alphabetical order by first letter.

STANDARD 4010-04 **The students will respond to stories and poetry they read themselves or that are read to them. (LITERATURE)**

OBJECTIVES

4010-0401. Read or listen to self-selected materials.

4010-0402. Retell sequence of events in stories they have read.

4010-0403. Tell which selections are real and which are make-believe.

4010-0404. Answer questions relating to details in a story.

4010-0405. Experience a variety of literary forms.

STANDARD 4010-05 **The students will develop skills in the correct spelling of words. (SPELLING)**

OBJECTIVES

4010-0501. Develop visual and auditory memory of words.

4010-0502. Identify simple patterns needed to spell words; e.g., CVC, CVCe.

4010-0503. Spell a first grade basic word list.

4010-0504. Write words from dictation.

4010-0505. Understand meaning of assigned spelling words.

STANDARD 4010-06 **The students will print legibly. (PENMANSHIP)**

OBJECTIVES

4010-0601. Write manuscript letters and numbers.

4010-0602. Space letters and words correctly on lines.

4010-0603. Write first and last name.

4010-0604. Demonstrate neatness in written work.

STANDARD 4010-07 **The students will express ideas and experiences in written form. (WRITTEN COMPOSITION)**

OBJECTIVES

4010-0701. Develop ideas for writing.

4010-0702. Write personal experiences, stories, etc.

4010-0703. Share written work with others.

STANDARD 4010-08 **The students will learn about and experience the techniques of drama. (DRAMA: Participant, Observer/ Listener, Critic)**

OBJECTIVES

4010-0801. Improvise experiences with each of the five senses to interpret various environments; e.g., seashore, woods, city street.

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4010-0802. Memorize and recite short selections.

4010-0803. Participate in choral speaking.

4010-0804. Demonstrate different ways the body and its parts can move, such as pushing/pulling, reaching/bending, lifting/dropping, etc.

4010-0805. Use the face, voice, and body to express emotions; e.g., happiness, surprise, fear.

4010-0806. Role-play a simple character through actions.

4010-0807. Demonstrate appropriate behavior when viewing and listening to a performance.

4010-0808. Use simple props for stories or plays.

LANGUAGE ARTS LEVEL 2

LA LEVEL 2

SIS NUMBER: 4020
SIS CODE: LA

CORE STANDARDS OF THE COURSE

STANDARD 4020-01	**The students will listen to verbal information and demonstrate literal and inferential understanding. (LISTENING)**

OBJECTIVES

4020-0101. Listen to the person who is speaking.

4020-0102. Follow two- and three-step directions.

4020-0103. Retell specific details of information, such as sequence of events.

4020-0104. Demonstrate comprehension of literary selections read aloud to them by drawing a picture, acting out the dial ogue, writing a story, etc.

STANDARD 4020-02	**The students will express ideas and opinions as they increase their spoken vocabulary. (SPEAKING)**

OBJECTIVES

4020-0201. Use vocabulary appropriate to the situation.

4020-0202. Recite second grade selections individually and as part of choral speaking.

4020-0203. Contribute remarks or ask questions related to topics being discussed.

4020-0204. Explain processes and activities or give sequential directions; e.g., how to play a game, where to find the principal's office.

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STANDARD 4020-03 **The students will use phonetic, structural, and sight word recognition skills in expanding their reading vocabularies. They will increase their comprehension of sentences and stories. (READING)**

OBJECTIVES

4020-0301. Know sound-symbol relationships of consonants and vowels as presented in the reading scope and sequence.

4020-0302. Use structural analysis to pronounce contractions, compound words, possessives, and singular and plural forms of words.

4020-0303. Identify suffixes and prefixes, and read multisyllable words.

4020-0304. Read the sight words and basal vocabulary required by the reading program.

4020-0305. Know antonyms, synonyms, homonyms, and multiple meaning words on the students' instructional level.

4020-0306. Identify the referent for most pronouns in context.

4020-0307. Comprehend word and sentence meanings.

4020-0308. Discriminate between a statement and a question.

4020-0309. Read and follow directions.

4020-0310. Alphabetize up to second letter.

STANDARD 4020-04 **The students will understand literal information and inferred meaning as they expand their reading interests. (LITERATURE)**

OBJECTIVES

4020-0401. Read a variety of self-selected material.

4020-0402. Identify main ideas and note the supporting details.

4020-0403. Recall the sequence of events in a story.

4020-0404. Identify characters, events, and settings.

4020-0405. Tell whether a selection is fantasy or if it could really have happened and why.

4020-0406. Respond creatively to poems, stories, and books.

STANDARD 4020-05 **The students will learn the correct spelling of words. (SPELLING)**

OBJECTIVES

4020-0501. Develop visual and auditory memory of words.

4020-0502. Make generalizations about common spelling patterns.

4020-0503. Spell a second grade basic word list.

4020-0504. Write words and sentences from dictation.

4020-0505. Discriminate between correct and incorrect spelling of words on the students' level.

4020-0506. Show understanding of spelling words by being able to tell what they mean or by using them in a sentence.

STANDARD 4020-06 **The students will print legibly. (PENMANSHIP)**

OBJECTIVES

4020-0601. Demonstrate correct formation and spacing of manuscript letters, words, and numbers.

4020-0602. Write name, address, and telephone number correctly.

4020-0603. Correct their own handwriting.

4020-0604. Demonstrate neatness in written work.

STANDARD 4020-07 **The students will express ideas and experiences in written form. (WRITTEN COMPOSITION)**

OBJECTIVES

4020-0701. Generate ideas for writing.

4020-0702. Write personal experiences, stories, poetry, friendly letters, etc.

4020-0703. Recognize complete sentences.

4020-0704. Share written work with others.

4020-0705. Use capital letters, periods, and question marks.

STANDARD 4020-08 **The students will learn about and experience the techniques of drama. (DRAMA: Participant, Observer/Listener, Critic)**

OBJECTIVES

4020-0801. Pantomime the use of each of the senses tasting a lemon, touching a hot plate, hearing a loud noise.

4020-0802. Improvise a scene or story with others.

4020-0803. Speak before a group of peers; e.g., Show and Tell.

4020-0804. Improvise body movements in response to pictures, sounds, music, stories, etc.

4020-0805. Improvise dialogue in response to pictures, sounds, music, or stories, etc.

4020-0806. Develop a dialogue and actions appropriate for characters in a story or play.

4020-0807. Demonstrate appropriate behavior when listening to and viewing a performance by peers or others.

4020-0808. Create and operate a puppet; e.g., paper sack, sock, finger, to represent a given character.

LANGUAGE ARTS LEVEL 3

LA LEVEL 3

SIS NUMBER: 4030
SIS CODE: LA

CORE STANDARDS OF THE COURSE

STANDARD 4030-01 **The students will listen to verbal information and show literal and inferential comprehension. (LISTENING)**

OBJECTIVES

4030-0101. Pay attention to the teacher or to others who are speaking or presenting.

4030-0102. Follow three- and four-step directions correctly.

4030-0103. Tell major points or sequence of events.

4030-0104. Respond to speakers; e.g., ask questions and make contributions.

4030-0105. React to literary selections read aloud.

STANDARD 4030-02 **The students will verbally express ideas, opinions, and reactions in a variety of situations. (SPEAKING)**

OBJECTIVES

4030-0201. Recite third grade selections clearly and fluently.

4030-0202. Express and support personal opinions about topics presented.

4030-0203. Respond to opinions expressed by others.

4030-0204. Explain how to do something or tell about an event.

4030-0205. Answer questions accurately.

4030-0206. Ask appropriate questions when additional information is needed.

STANDARD 4030-03	**The students will demonstrate accuracy and efficiency in decoding words; increase their knowledge of word, sentence, and paragraph meaning; and apply beginning study skills. (READING)**

OBJECTIVES

4030-0301. Build fluency in phonetic and structural analytical skills.

4030-0302. Identify the meaning of affixes and root (base) words as they occur in the reading task.

4030-0303. Know the correct meaning of common homonyms in context.

4030-0304. Attack multisyllable words systematically; e.g., prefix, root word, ending.

4030-0305. Read the sight words and basal vocabulary as they appear in the reading program.

4030-0306. Comprehend word, sentence, and paragraph meanings in context.

4030-0307. Recognize main ideas in a selection.

4030-0308. Alphabetize to the third letter.

4030-0309. Read and follow directions.

STANDARD 4030-04	**The students will read fiction and nonfiction literature and increase their involvement with children's classics. (LITERATURE)**

OBJECTIVES

4030-0401. Read a variety of self-selected materials.

4030-0402. Retell story lines (plots) in the selections.

4030-0403. Predict logical conclusions to events in the selection.

4030-0404. Compare characters, events, plots, and settings.

4030-0405. Recognize cause and effect relationships.

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STANDARD 4030-05 **The students will correctly spell words needed to record ideas and experiences. (SPELLING)**

OBJECTIVES

4030-0501. Utilize major spelling generalizations; e.g., same vowel sound/different spellings.

4030-0502. Spell a basic word list as adopted by the school.

4030-0503. Write words and sentences with correct punctuation and capitalization.

4030-0504. Discriminate between correct and incorrect spelling of words on level.

4030-0505. Spell homonyms and contractions correctly.

4030-0506. Show understanding of spelling words by telling what they mean or using them in a sentence.

STANDARD 4030-06 **The students will maintain manuscript skills and learn to write cursive. (PENMANSHIP)**

OBJECTIVES

4030-0601. Use correct formation of all upper and lower case letters and numbers in cursive.

4030-0602. Use proper strokes to join letters to form words.

4030-0603. Proof and correct their own handwriting.

4030-0604. Demonstrate neatness in written work.

STANDARD 4030-07 **The students will express ideas and experiences in written form. (WRITTEN COMPOSITION)**

OBJECTIVES

4030-0701. Generate and organize ideas for writing.

4030-0702. Write personal experiences, stories, poetry, etc.

4030-0703. Write letters and informative selections.

4030-0704. Expand thoughts in sentences by adding words and phrases.

4030-0705. Combine sentences to improve communication.

4030-0706. Share and respond to the writing of others.

4030-0707. Use capital letters and terminal punctuation as well as recognize nouns and verbs.

STANDARD 4030-08	**The students will learn about and experience the techniques of drama. (DRAMA: Participant, Observer/Listener, Critic)**

OBJECTIVES

4030-0801. Participate in a group improvisation of a story.

4030-0802. Stay in character in a short play or skit.

4030-0803. Speak expressively in a choral or storytelling situation.

4030-0804. Describe the feelings portrayed in a given picture or situation.

4030-0805. Identify the setting, plot, and characters in a simple play or story.

4030-0806. Demonstrate and discuss appropriate behavior when viewing a performance.

4030-0807. Give personal reactions after viewing a performance.

4030-0808. Make and/or use simple props or costumes to help portray a character.

Library Media

The Mission

The mission of the school library media program is to ensure that all students and staff are effective users of ideas and information in all formats.

Information Power, 1988

Library Media Course Chart
Levels K—6

	The students will identify and locate:	**The students will select and use:**	**The students will evaluate for:**	**The students appreciate literature by:**
Level K 4600	Areas of Library Media Center.	Library Media Center.	Enjoyment.	Listening and responding as well as reciting nursery rhymes.
Level 1 4601	Books and other materials.	Books and other materials.	Independent reading.	Listening and responding as well as reciting nursery rhymes.
Level 2 4602	Parts of a book.	Appropriate reading and interest level materials.	Main ideas.	Reading, listening, and responding as well as reciting folk tales.
Level 3 4603	Reference materials.	Reading and information needs.	Fiction and nonfiction.	Reading and responding as well as reciting short poems.
Level 4 4604	Information sources.	Reading and information needs.	Information needs.	Reading and responding as well as reciting short poems with expression.
Level 5 4605	Parts of indexing systems.	Reading and information needs.	Critical viewing and reading.	Reading and responding as well as reciting epic poems.
Level 6 4606	Resources needed for research process.	Reading and research materials.	Appropriateness, currency, and relevancy.	Reading and responding as well as reciting mythological tales.

LIBRARY MEDIA LEVELS K-3

COURSE DESCRIPTION

An effective school library media program depends on the collaborative efforts of all those who are responsible for student learning. The coordination of curriculum development and implementation with the resources of the school library media center and the application of principles of information access to the content of the curriculum provide the basis for an effective program.

Following are the library media standards and objectives developed and refined by library media leaders in the state. The course description emphasizes that library media specialists/teachers and classroom teachers plan and teach cooperatively to link the practice of library media skills with other core areas. This ensures that students become more effective users of information.

The using of information is a basic skill necessary for all students. Foundation skills must be introduced and reinforced throughout the elementary grades to assure competence. These skills will be needed for pursuit of information in core curriculum standards and objectives in various subject areas and throughout life.

The purpose of the library media program is to help students become self-motivated, successful, problem-solving learners. Students must have formal training and practice in using information and resources. They must learn to find, evaluate, and synthesize information. They also must learn to appreciate the value of reading material in their lives through a variety of activities that encourage continual growth as readers who choose to read.

The library media skills core curriculum is based on four essential strands:

1. Identifying and locating information and resources.
2. Selecting and using information and resources.
3. Evaluating information and resources.
4. Appreciating and evaluating children's literature.

LIBRARY MEDIA LEVEL K

LM LEVEL K

SIS COURSE NUMBER: 4600
SIS CODE: LM

CORE STANDARDS OF THE COURSE

STANDARD 4600-01 **The students will locate areas of the library media center.**

OBJECTIVES

4600-0101. Locate easy fiction and nonfiction areas.

4600-0102. Locate the circulation area.

4600-0103. Locate the reading, listening, and viewing areas.

STANDARD 4600-02 **The students will develop abilities to use a library media center and its resources.**

OBJECTIVES

4600-0201. Explain function of library media center; e.g., teaching skills, providing access to information, lending materials.

4600-0202. Exhibit self-controlled conduct.

4600-0203. Demonstrate proper care of books and other materials.

4600-0204. Define the following terms: easy fiction, picture books, nonfiction, title, spine, and cover.

STANDARD 4600-03 **The students will evaluate library media center resources.**

OBJECTIVES

4600-0301. Choose books and other materials for their own enjoyment.

4600-0302. Choose books and other materials for group activity.

STANDARD 4600-04	**The students will listen and respond to children's literature.**

OBJECTIVES

4600-0401. Listen to selections of literature and folklore; e.g., nursery rhymes, poems, ABC and number books, predictable books, Caldecott books.

4600-0402. View audiovisual presentations of children's literature.

4600-0403. Respond to children's literature presentations; e.g., draw a picture, sing a song, make simple puppets, participate in role-playing.

4600-0404. Recite nursery rhymes from memory.

LIBRARY MEDIA LEVEL 1

LM LEVEL 1

SIS COURSE NUMBER: 4601
SIS CODE: LM

CORE STANDARDS OF THE COURSE

STANDARD 4601-01 **The students will identify and locate books within the areas of the library media center.**

OBJECTIVES

4601-0101. Identify and locate books and other materials within the areas of the library media center.

4601-0102. Understand the function of the circulation area.

STANDARD 4601-02 **The students will select and use library books and other materials in the library media center.**

OBJECTIVES

4601-0201. Use checkout procedures to borrow library media materials.

4601-0202. Demonstrate how to use and care for books.

4601-0203. Define and use the following terms: title, author, illustrator, and illustrations.

STANDARD 4601-03 **The students will evaluate information and resources.**

OBJECTIVES

4601-0301. Evaluate books to see if they can be read independently.

4601-0302. Tell which selections are real and which are make-believe.

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STANDARD **4600-04**	**The students will appreciate and respond to children's literature.**

OBJECTIVES

4601-0401. Listen to selections from literature and folklore, with emphasis on those books receiving Caldecott honor and medal awards.

4601-0402. Read picture, easy fiction, and nonfiction books.

4601-0403. View audiovisual presentations of children's literature.

4601-0404. Respond to literature presentations; e.g., draw a picture, sing a song, make simple puppets, participate in role-playing.

4601-0405. Recite additional nursery rhymes.

LIBRARY MEDIA LEVEL 2

LM LEVEL 2

SIS COURSE NUMBER: 4602
SIS CODE: LM

CORE STANDARDS OF THE COURSE

STANDARD 4602-01	**The students will identify and locate the parts of a book.**

OBJECTIVES

4602-0101. Identify and locate the cover, spine, call number, title, title page, text, index, table of contents, and glossary.

4602-0102. Understand that all books have similar parts.

STANDARD 4602-02	**The students will select and use library books and other materials for reading and information.**

OBJECTIVES

4602-0201. Select books and other materials on appropriate reading and interest level.

4602-0202. Select books and other materials to meet information needs.

4602-0203. Define and use the following terms: author, title, illustrator, illustration, cover, spine, title page, call number, index, table of contents, and glossary.

STANDARD 4602-03	**The students will evaluate information and resources.**

OBJECTIVES

4602-0301. Recognize main idea and supporting details.

4602-0302. Predict conclusions in books and other materials.

4602-0303. Evaluate books and other materials for information needs.

STANDARD **4602-04**	**The students will appreciate and respond to literature that is presented to them or that they read.**

OBJECTIVES

4602-0401. Recall story elements as appropriate; e.g., plot, setting, character.

4602-0402. Listen to literature and folklore presentations including books of merit; e.g., Caldecott, juvenile classics, professionally recommended titles.

4602-0403. Read a wide variety of self-selected books.

4602-0404. Respond to literature by drawing a picture, acting out the dialogue, writing a story, etc.

4602-0405. Retell simple folk tales.

LIBRARY MEDIA LEVEL 3

LM LEVEL3

SIS COURSE NUMBER: 4603
SIS CODE: LM

CORE STANDARDS OF THE COURSE

STANDARD 4603-01	**The students will identify and locate print and nonprint materials, reference materials, magazines, equipment and the catalog system (card or automated).**

OBJECTIVES

4603-0101. Review parts of a book including: cover, spine, title, title page, author, illustrator, call number, table of contents, index, and glossary.

4603-0102. Identify and locate audiovisual equipment; e.g., filmstrip projectors, computers, record players, cassette recorders, VCRs.

4603-0103. Identify and locate nonprint materials; e.g., filmstrips, maps, records, cassettes, computer software, videotapes.

4603-0104. Identify and locate reference materials; e.g., encyclopedias, almanacs, atlases, dictionaries.

4603-0105. Identify and locate the magazine section.

4603-0106. Identify and locate the catalog system (card or automated).

4603-0107. Identify and locate catalog headings: subject, title, and author.

4603-0108. Locate books and other materials using the call number.

STANDARD 4603-02	**The students will select and use a wide variety of books and other materials for reading and information.**

OBJECTIVES

4603-0201. Use the catalog system to find books and other materials.

4603-0202. Select and use appropriate sources of information; e.g., encyclopedia, dictionary, almanac, atlas.

4603-0203. Select and use magazines.

STANDARD 4603-03 **The students will evaluate information and resources.**

OBJECTIVES

4603-0301. Evaluate whether a fiction or nonfiction book is appropriate for a specific need.

4603-0302. Evaluate books and other materials for information needs.

STANDARD 4603-04 **The students will appreciate and respond to children's literature.**

OBJECTIVES

4603-0401. Recognize the difference between fiction and nonfiction books and other materials.

4603-0402. Listen to literature and folklore presentations.

4603-0403. Read a wide variety of books that reflect personal interest.

4603-0404. Recall story elements as appropriate; e.g., theme, style, format.

4603-0405. Respond to literature through drama, art, writing experience, or music.

4603-0406. Recite short poems.

Mathematics

PREFACE

The State Core for Mathematics has been written based on the Curriculum and Evaluation Standards (1989) from the National Council of Teachers of Mathematics (NCTM). There are 13 standards in the State Core which reflect the NCTM Standards.

Each standard has an accompanying purpose statement which establishes rationale for its inclusion in the State Core; objectives which are measurable outcomes; and, grade level specific strategies which provide a means of teaching the objective at the specific grade level.

Because new types of assessment are necessary for some of the measurable outcomes as well as the standard type of testing, an asterisk (*) may be noted after a strategy. This would indicate that the strategy may be evaluated using alternative assessment procedures. Other types of assessment for inclusion in a curriculum would be performance assessment, observation, questioning techniques, interviews, portfolios, journals, and traditional paper-and-pencil tests.

MATHEMATICS LEVEL K

MATH LEVEL K

SIS NUMBER: 5000
SIS CODE: MA

STANDARD 5000-01	**The students will apply mathematical concepts and skills to solve problems they encounter in daily living.**

PURPOSE: Problem solving should be the central focus of the mathematics curriculum. As such, it is a primary goal of all mathematics instruction and is an integral part of all mathematical activity. Problem solving is not a distinct topic, but a process that should permeate the entire program and provide the context in which concepts and skills can be learned. Students should have many experiences in creating problems from real-world activities, organized data, and equations.

OBJECTIVES

5000-0101.	Develop and apply problem-solving approaches to investigate and understand mathematical content.
5000-0102.	Formulate problems from everyday and mathematical situations.
5000-0103.	Develop and apply strategies to solve a wide variety of problems.
5000-0104.	Verify and interpret results with respect to the original problem.
5000-0105.	Acquire confidence in using mathematics meaningfully.

SKILLS AND STRATEGIES

1. Act out a story involving appropriate kindergarten mathematical concepts.*
2. Apply the use of manipulatives to model and solve problems.*
3. Draw a picture to illustrate and solve problems.*

STANDARD 5000-02	**The students will show understanding and application of mathematical concepts and justification of solutions to problems by communicating in oral, pictorial, and/or written form.**

PURPOSE: This standard highlights the need to involve students individually in cooperative learning groups actively doing mathematics. Exploring, investigating, describing, and explaining mathematical ideas promotes communication. Teachers facilitate this process when they pose probing questions and invite students to explain their thinking.

OBJECTIVES

5000-0201. Relate physical materials, pictures, and diagrams to mathematical ideas.

5000-0202. Reflect on and clarify thinking about mathematical ideas and situations.

5000-0203. Relate everyday language to mathematical language and symbols.

5000-0204. Represent, discuss, read, write, and listen to mathematical ideas as a vital part of learning and using mathematics.

SKILLS AND STRATEGIES

1. Talk about sets of objects, numbers, and shapes.*

STANDARD 5000-03 **The students will explain and justify logical reasoning strategies when working through (learning) a mathematical concept or solving a problem.**

PURPOSE: A climate should be established in the classroom that places critical thinking at the heart of instruction. Both teachers' and students' statements should be open to question, reaction, and elaboration from others in the classroom. Such climate depends on all members of the class expressing genuine respect and support for one another's ideas. Students need to know that being able to explain and justify their thinking is necessary and that how a problem is solved is as important as its answer. This climate is established when students have opportunities to apply their reasoning skills and when justifying one's thinking is an expected component of problem discussions.

OBJECTIVES

5000-0301. Draw conclusions about mathematics.

5000-0302. Apply models, known facts, properties, and relationships to explain their thinking.

5000-0303. Justify their answers and solution processes.

5000-0304. Develop patterns and establish relationships in order to analyze mathematical situations.

5000-0305. Recognize the interrelatedness of mathematical concepts (mathematics makes sense).

SKILLS AND STRATEGIES

1. Identify similar objects according to common attributes. (Both objects are round.)
2. Establish relationships between two objects or two sets of objects. (The blue ball is bigger than the red ball. There are more triangles than circles.)

STANDARD 5000-04 **The students will recognize the interrelatedness of mathematical concepts within the field of mathematics as well as throughout other disciplines, especially as they apply to daily living.**

PURPOSE: Mathematics is often seen by young students as a collection of separate and unrelated ideas. They also see it as unrelated to the other curricular areas and to their own lives. Computation, measurement, statistics, and problem solving tend to be taught in isolation. Students need to recognize the relationships among these various topics. Mathematical ideas also need to be connected to the students' everyday experiences, both in and out of school, so they become aware of the usefulness of mathematics. A classroom in which mathematical situations are explored in all curricular areas, as well as in events from outside the classroom, provides students the opportunity to see that mathematics is a necessary and valuable discipline.

OBJECTIVES

5000-0401.	Link conceptual and procedural knowledge.
5000-0402.	Relate various representations of concepts or procedures to one another.
5000-0403.	Recognize relationships among different topics in mathematics.
5000-0404.	Employ mathematics in other curricular areas.
5000-0405.	Employ mathematics in their daily lives.

SKILLS AND STRATEGIES

1. At appropriate grade levels, **CONNECTIONS** should:

   - Occur between and among physical models, pictorial representations, and abstract symbols.
   - Include relating addition and subtraction, multiplication and division, addition and multiplication, subtraction and division.

- Include relating geometric models to procedures with numbers such as relationships between measurement and the number line and area models for numbers, including fractions and decimals.

2. Additional **CONNECTIONS** exist and should be developed between math and other curricular areas. Students should:

- Recognize and develop mathematical situations that arise in literature.
- Recognize and develop mathematical application that occurs in social studies (graphs, tables, map skills, etc.).
- Recognize and develop the use of math skills and concepts in science (measurement, graphs, data analysis, classification, etc.).
- Recognize and develop relationships between math and art (shapes, proportion, scale, tessellations, etc.).
- Recognize and develop the use of mathematics in music (rhythm patterns, time signatures, note values, etc.).
- Develop and use mathematics in the study of health and physical education (heart rhythms, blood pressure, calories, scores and measurements in games, etc.).

STANDARD 5000-05	**The students will employ estimation strategies in order to demonstrate flexibility in working with numbers and measurement as they relate to the students' everyday lives.**

PURPOSE: Estimation presents students with another dimension of mathematics. Terms such as "about," "near," "closer to," "between," and "a little less than" illustrate that mathematics involves more than exactness. Estimation interacts with number sense and spatial sense to help students develop insights into concepts and procedures, flexibility in working with numbers and measurements, and an awareness of reasonable results. Estimation skills and understanding enhance the abilities of students to deal with everyday quantitative situations.

OBJECTIVES

5000-0501. Explore and develop estimation SKILLS AND STRATEGIES.

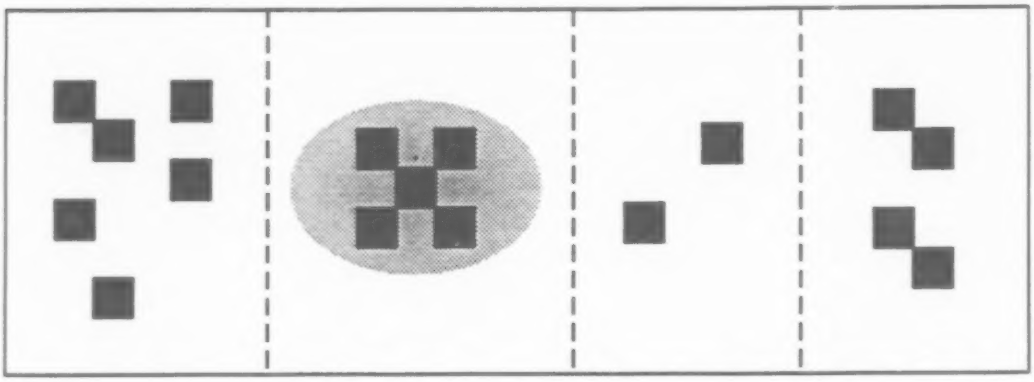
5000-0502. Recognize when it is appropriate to estimate.

5000-0503. Determine the reasonableness of results.

5000-0504. Apply estimation strategies in working with quantities, measurement, computation, and problem solving.

SKILLS AND STRATEGIES

1. Compare sets with less than ten members to a referent set using the terms "more than," "less than," and "about the same." (The set in the shaded area has five members. Without counting, classify the other sets as fewer than five, about five, or more than five.)*



STANDARD 5000-06 **The students will demonstrate an understanding of numbers (number sense) as they apply to the students' everyday world.**

PURPOSE: Students must understand numbers if they are to make sense of the ways numbers are used in their everyday world. They need to use numbers to quantify, identify location, identify a specific object in a collection, name, and measure. Furthermore, an understanding of place value is crucial for later work with numbers and computation concepts.

Students come to understand number meanings gradually. To encourage their understanding, teachers can offer classroom experiences in which students first manipulate physical objects and then use their own language to explain their thinking.

OBJECTIVES

5000-0601.	Construct number meanings through real-world experiences and the use of physical materials.
5000-0602.	Demonstrate an understanding of our numeration system by relating patterning, counting, grouping, and place-value concepts.
5000-0603.	Develop number sense and interpret the multiple uses of numbers encountered in the real world.

SKILLS AND STRATEGIES

1. Classify objects by sorting into sets with similar attributes.

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2. Construct models of numbers to ten.*

3. Apply counting strategies to determine the number of items in a set with less than ten elements.*

4. Identify which of two sets of objects has more or fewer elements.

5. Sort objects into groups of ten.*

6. Compare sets of objects to determine if they have the same number of objects.

7. Designate position of objects by using the ordinal numbers first, second, and third.

8. Identify examples of number usage in the environment (addresses, signs, room numbers).

9. Apply number skills to sets of objects in the environment. (Count the legs on your chair. Which family has more pets?)

STANDARD 5000-07	**The students will relate combinations of numbers to other numbers by establishing relationships among operations and by acquiring insights into the effects of performing an operation on a pair or set of numbers.**

PURPOSE: Understanding the fundamental operations of addition, subtraction, multiplication, and division is central to knowing mathematics. One essential component of what it means to understand an operation is recognizing conditions in real-world situations that indicate the operation would be useful in those situations. Other components include building an awareness of models and the properties of an operation, seeing relationships among operations, and acquiring insight into the effects of an operation on a pair of numbers. These four components are aspects of operation sense.

OBJECTIVES

5000-0701. Develop meaning for the operations by modeling and discussing a rich variety of problem situations.

5000-0702. Recognize and employ a wide variety of problem structures that can represent a single operation.

5000-0703. Relate the mathematical language and symbolism of operations to problem situations and informal language.

5000-0704. Develop operation sense.

SKILLS AND STRATEGIES

1. Identify conditions in real-world situations that would indicate joining or separating of sets.
2. Describe joining or separating of sets using informal language.*

STANDARD 5000-08 **The students will demonstrate ability in computational techniques through the use of paper and pencil, mental math, estimation, and technology to solve problems.**

PURPOSE: The purpose of computation is to solve problems. While computation remains important in mathematics, as well as in the students' everyday lives, advances in technology require us to rethink how computation is done today. In many situations, answers are estimated or computed mentally, and we must prepare students to function in these situations. Students must also discover the usefulness of calculators in solving problems involving large numbers and tedious calculations. While proficiency with paper and pencil computation is still important, it cannot continue to dominate the mathematics curriculum. Other equally important mathematical topics and skills must also be learned to enable students to function as members of society in a highly technological world of the future and be prepared to pursue the careers of their choice.

The memorization of basic facts is necessary, but basic fact memorization should be incorporated into a truly rich curriculum rather than be its primary focus.

OBJECTIVES

5000-0801. Model, explain, and develop reasonable proficiency with basic facts and algorithms.

5000-0802. Employ a variety of mental computation and estimation techniques.

5000-0803. Demonstrate the ability to use calculators in appropriate computational situations.

5000-0804. Select and use computation techniques appropriate to specific problems and determine whether the results are reasonable.

SKILLS AND STRATEGIES

1. Model additional situations by joining sets of objects.*
2. Model subtraction situations by separating sets of objects.*

STANDARD 5000-09 **The students will use geometry to explore the relationship of objects in the world in which we live.**

PURPOSE: The study of geometry is an important part of the mathematics curriculum. Geometry helps us represent and describe the world in which we live. It should include investigations involving two- and three-dimensional models. In learning geometry, students need to investigate, experiment, and explore with everyday objects and with manipulatives.

OBJECTIVES

5000-0901. Describe, model, draw, and classify shapes.

5000-0902. Investigate and predict the results of combining, subdividing, and changing shapes.

5000-0903. Develop spatial sense.

5000-0904. Relate geometric ideas to number and measurement ideas.

5000-0905. Recognize and appreciate geometry in the world.

SKILLS AND STRATEGIES

1. Classify objects according to attributes such as size, shape, and color.
2. Recognize circles, squares, rectangles, parallelograms, rhombi, and triangles; and find examples in the students' environment.
3. Combine shapes to create two- or three- dimensional figures by using blocks or other manipulatives; find examples in the students' environment.*

STANDARD 5000-10 **The students will understand that measurement is the comparing of objects with nonstandard and standard units such as U.S. Common and metric.**

PURPOSE: Measurement is of central importance to the curriculum because of its power to help students see that mathematics is useful in everyday life and to help them develop many mathematical concepts and skills. Measurement is a natural context in which to introduce the need for learning about fractions and decimals, and it encourages students to be actively involved in discussing and solving problems.

Instruction at the K-4 level emphasizes the importance of establishing a firm foundation in the basic underlying concepts and skills of measurement. Students should understand that measurement is never exact.

OBJECTIVES

5000-1001. Understand the attributes of length, capacity, weight, area, volume, time, temperature, and angle.

5000-1002. Develop the process of measuring and concepts related to units of measurement.

5000-1003. Make and use estimates of measurement.

5000-1004. Make and use measurements in problem and everyday situations.

SKILLS AND STRATEGIES

1. Measure the length of objects by using non-standard units. (My pencil is as long as seven paper clips.)*
2. Compare two objects by specified attributes such as length, weight/mass, capacity/volume, or temperature.
3. Name the days of the week in order.
4. Recognize that calendars and blocks can be used for measuring time.

STANDARD 5000-11 **The students will collect, organize, describe, display, and interpret data while making decisions and predictions based on that data.**

PURPOSE: Collecting, organizing, describing, displaying, and interpreting data, as well as making decisions and predictions on the basis of that information, are skills that are increasingly important in a society based on technology and communication. The study of statistics and probability highlights the importance of questioning, conjecturing, and searching for relationships when formulating and solving real-world problems.

OBJECTIVES

5000-1101. Collect, organize, and describe data.

5000-1102. Construct, read, and interpret displays of data.

5000-1103. Formulate and solve problems that involve collecting and analyzing data.

5000-1104. Explore concepts of chance.

SKILLS AND STRATEGIES

1. Collect and organize objects and information.*
2. Construct and interpret real graphs; i.e., graphs made from people, blocks, and other materials which have been sorted and placed on a grid.*

STANDARD 5000-12 **The students will use knowledge of fractions and decimals to describe real-world phenomena and apply it to problems.**

PURPOSE: Fractions and decimals represent a significant extension of students' knowledge about numbers. When students possess a sound understanding of fraction and decimal concepts, they can use this knowledge to describe real-world phenomena and apply it to problems involving measurement, probability, and statistics. An understanding of fractions and decimals broadens students' awareness of the usefulness and power of numbers and extends their knowledge of the number system. It is critical in grades K-4 to develop concepts and relationships that will serve as a foundation for more advanced concepts and skills.

The K-4 instruction should help students understand fractions and decimals, explore their relationship, and build initial concepts about order and equivalence. It is crucial that physical materials, diagrams, and real-world situations in conjunction with ongoing efforts to relate their learning experiences to oral language and symbols be used in instruction.

OBJECTIVES

5000-1201. Develop concepts of fractions, mixed numbers, and decimals.

5000-1202. Develop number sense for fractions and decimals.

5000-1203. Relate fractions to decimals and find equivalent fractions through the use of models.

5000-1204. Apply fractions and decimals to problem situations.

SKILLS AND STRATEGIES

1. Share objects equally.
2. Cut models to illustrate congruent regions.*

STANDARD 5000-13	**The students will identify and work with patterns to understand how mathematics applies to the real world.**

PURPOSE: Patterns are everywhere. Students who are encouraged to look for patterns and to express them mathematically begin to understand how mathematics applies to the world in which they live. Identifying and working with a wide variety of patterns helps students to develop the ability to classify and organize information. Relating patterns in numbers, geometry, and measurement helps them understand connections among mathematical topics. Such connections foster the kind of mathematical thinking that serves as a foundation for the more abstract ideas studied in the later grades.

OBJECTIVES

5000-1301. Recognize, describe, extend, and create a wide variety of patterns.

5000-1302. Represent and describe mathematical relationships.

5000-1303. Explore the use of variables and open sentences to express relationships.

SKILLS AND STRATEGIES

1. Identify, duplicate, and create patterns using personal and physical objects.*

MATHEMATICS LEVEL 1

MATH LEVEL 1

SIS NUMBER: 5010
SIS CODE: MA

STANDARD 5010-01 **The students will apply mathematical concepts and skills to solve problems they encounter in daily living.**

PURPOSE: Problem solving should be the central focus of the mathematics curriculum. As such, it is a primary goal of all mathematics instruction and is an integral part of all mathematical activity. Problem solving is not a distinct topic, but a process that should permeate the entire program and provide the context in which concepts and skills can be learned. Students should have many experiences in creating problems from real-world activities, organized data, and equations.

OBJECTIVES

5010-0101. Develop and apply problem-solving approaches to investigate and understand mathematical content.

5010-0102. Formulate problems from everyday and mathematical situations.

5010-0103. Develop and apply strategies to solve a wide variety of problems.

5010-0104. Verify and interpret results with respect to the original problem.

5010-0105. Acquire confidence in using mathematics meaningfully.

SKILLS AND STRATEGIES

1. Demonstrate an understanding of a problem by restating it in the students' own words.*

2. Formulate a plan to solve a problem by using one or more of the following strategies:*

   Act out a story.
   Use manipulatives or models.
   Draw a picture.

3. Create a problem and state it orally when given a picture, a model, or a real-life situation.*

STANDARD 5010-02	**The students will show understanding and application of mathematical concepts and justification of solutions to problems by communicating in oral, pictorial, and/or written form.**

PURPOSE: This standard highlights the need to involve students individually in cooperative learning groups actively doing mathematics. Exploring, investigating, describing, and explaining mathematical ideas promotes communication. Teachers facilitate this process when they pose probing questions and invite students to explain their thinking.

OBJECTIVES

5010-0201. Relate physical materials, pictures, and diagrams to mathematical ideas.

5010-0202. Reflect on and clarify thinking about mathematical ideas and situations.

5010-0203. Relate everyday language to mathematical language and symbols.

5010-0204. Represent, discuss, read, write, and listen to mathematical ideas as a vital part of learning and using mathematics.

SKILLS AND STRATEGIES

1. Demonstrate an understanding of a problem by restating it in the students' own words. (This is also in problem solving.)*

2. Represent mathematical topics studied at this grade level by drawing pictures or using objects.*

3. Discuss, read, and write about mathematical topics presented at this grade level. (Write 12 things you know about the number 6.)*

4. Develop mathematical vocabulary and symbols appropriate to this grade level and relate them to the students' informal language.

5. Discuss and write about attitudes concerning mathematics topics and lessons. (Possible journal entries: What I liked best about this lesson. What was easy and what was difficult about this lesson.)*

STANDARD 5010-03 **The students will explain and justify logical reasoning SKILLS AND STRATEGIES when working through (learning) a mathematical concept or solving a problem.**

PURPOSE: A climate should be established in the classroom that places critical thinking at the heart of instruction. Both teachers' and students' statements should be open to question, reaction, and elaboration from others in the classroom. Such climate depends on all members of the class expressing genuine respect and support for one another's ideas. Students need to know that being able to explain and justify their thinking is necessary and that how a problem is solved is as important as its answer. This climate is established when students have opportunities to apply their reasoning skills and when justifying one's thinking is an expected component of problem discussions.

OBJECTIVES

5010-0301.	Draw conclusions about mathematics.
5010-0302.	Apply models, known facts, properties, and relationships to explain their thinking.
5010-0303.	Justify their answers and solution processes.
5010-0304.	Develop patterns and establish relationships in order to analyze mathematical situations.
5010-0305.	Recognize the interrelatedness of mathematical concepts (mathematics makes sense).

SKILLS AND STRATEGIES

1. Manipulate objects to justify the answer to a problem.*
2. Describe objects and patterns created from objects by using attributes such as size, shape, and color.

STANDARD 5010-04 **The students will recognize the interrelatedness of mathematical concepts within the field of mathematics as well as throughout other disciplines, especially as they apply to daily living.**

PURPOSE: Mathematics is often seen by young students as a collection of separate and unrelated ideas. They also see it as unrelated to the other curricular areas and to their own lives. Computation, measurement, statistics, and problem solving tend to be taught in isolation. Students need to recognize the relationships among these various topics. Mathematical ideas also need to be connected to the students' everyday experiences, both in and out of school, so they become aware of the usefulness of mathematics. A classroom in which mathematical situations are explored in all curricular areas, as well as in events from outside the classroom, provides students the opportunity to see that mathematics is a necessary and valuable discipline.

OBJECTIVES

5010-0401. Link conceptual and procedural knowledge.

5010-0402. Relate various representations of concepts or procedures to one another.

5010-0403. Recognize relationships among different topics in mathematics.

5010-0404. Employ mathematics in other curricular areas.

5010-0405. Employ mathematics in their daily lives.

SKILLS AND STRATEGIES

1. At appropriate grade levels, **CONNECTIONS** should:

   - Occur between and among physical models, pictorial representations, and abstract symbols.
   - Include relating addition and subtraction, multiplication and division, addition and multiplication, subtraction and division.
   - Include relating geometric models to procedures with numbers such as relationships between measurement and the number line and area models for numbers, including fractions and decimals.

2. Additional **CONNECTIONS** exist and should be developed between math and other curricular areas. Students should:

   - Recognize and develop mathematical situations that arise in literature.
   - Recognize and develop mathematical application that occurs in social studies (graphs, tables, map skills, etc.).
   - Recognize and develop uses of math skills and concepts in science (measurement, graphs, data analysis, classification, etc.).
   - Recognize and develop relationships between math and art (shapes, proportion, scale, tessellations, etc.).
   - Recognize and develop the use of mathematics in music (rhythm patterns, time signatures, note values, etc.).
   - Develop and use mathematics in the study of health and physical education (heart rhythms, blood pressure, calories, scores and measurements in games, etc.).

STANDARD 5010-05	**The students will employ estimation strategies in order to demonstrate flexibility in working with numbers and measurement as they relate to the students' everyday lives.**

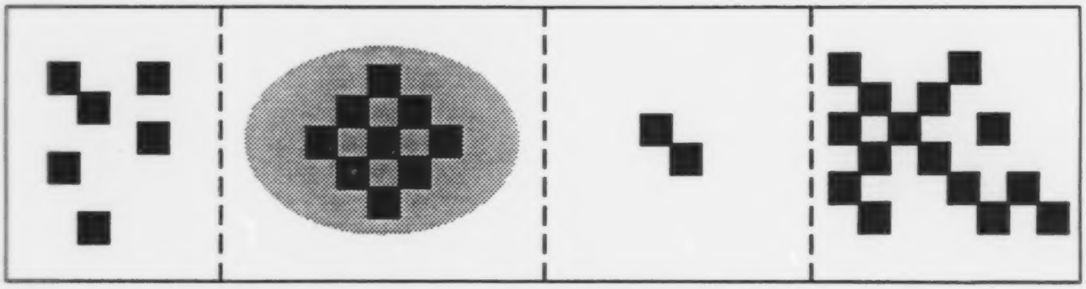
PURPOSE: Estimation presents students with another dimension of mathematics. Terms such as "about," "near," "closer to," "between," and "a little less than" illustrate that mathematics involves more than exactness. Estimation interacts with number sense and spatial sense to help students develop insights into concepts and procedures, flexibility in working with numbers and measurements, and an awareness of reasonable results. Estimation skills and understanding enhance the abilities of students to deal with everyday quantitative situations.

OBJECTIVES

5010-0501.	Explore and develop estimation strategies.
5010-0502.	Recognize when it is appropriate to estimate.
5010-0503.	Determine the reasonableness of results.
5010-0504.	Apply estimation strategies in working with quantities, measurement, computation, and problem solving.

SKILLS AND STRATEGIES

1. Compare sets with less than 20 members to a referent set using the terms "more than," "less than," and "about the same." (Similar to grade K.)



2. Compare measurements of length with a referent. (Cut a string that will fit around the pumpkin. Is your string too long, too short, or just about right?)*

STANDARD 5010-06 **The students will demonstrate an understanding of numbers (number sense) as they apply to the students' everyday world.**

PURPOSE: Students must understand numbers if they are to make sense of the ways numbers are used in their everyday world. They need to use numbers to quantify, identify location, identify a specific object in a collection, name, and measure. Furthermore, an understanding of place value is crucial for later work with numbers and computation concepts.

Students come to understand number meanings gradually. To encourage their understanding, teachers can offer classroom experiences in which students first manipulate physical objects and then use their own language to explain their thinking.

OBJECTIVES

5010-0601. Construct number meanings through real-world experiences and the use of physical materials.

5010-0602. Demonstrate an understanding of our numeration system by relating patterning, counting, grouping, and place-value concepts.

5010-0603. Develop number sense and interpret the multiple uses of numbers encountered in the real world.

SKILLS AND STRATEGIES

1. Construct models of numbers to 100.*
2. Demonstrate an understanding of the concept of zero by using zero to designate the number of elements in the empty set.
3. Sort objects into groups of ten; tell how many tens and how many ones.*
4. Identify and write a two-digit numeral given a set of objects.
5. Identify and write a two-digit numeral given the number of tens and ones.
6. Identify the number of tens and ones when given a two-digit numeral.
7. Count orally by ones to 100, by twos to 20, by fives to 100, and by tens to 100.*
8. Write numbers to 99 in expanded form.*
9. Identify the whole number immediately before or after any number to 99.
10. Compare and order sets of objects according to the number of elements.

11. Identify examples of number usage in the environment (addresses, signs, license plates, phone numbers).

12. Apply number skills to sets of objects in the environment. (Count the number of people in your class; put your Valentine candy in sets of ten.)

STANDARD 5010-07	**The students will relate combinations of numbers to other numbers by establishing relationships among operations and by acquiring insights into the effects of performing an operation on a pair or set of numbers.**

PURPOSE: Understanding the fundamental operations of addition, subtraction, multiplication, and division is central to knowing mathematics. One essential component of what it means to understand an operation is recognizing conditions in real-world situations that indicate the operation would be useful in those situations. Other components include building an awareness of models and the properties of an operation, seeing relationships among operations, and acquiring insight into the effects of an operation on a pair of numbers. These four components are aspects of operation sense.

OBJECTIVES

5010-0701.	Develop meaning for the operations by modeling and discussing a rich variety of problem situations.
5010-0702.	Recognize and employ a wide variety of problem structures that can represent a single operation.
5010-0703.	Relate the mathematical language and symbolism of operations to problem situations and informal language.
5010-0704.	Develop operation sense.

SKILLS AND STRATEGIES

1. Identify conditions in real-world situations that would indicate joining of sets, separating of sets, or comparison of sets.

2. Write an addition sentence for any given situation involving the joining of sets.

3. Write a subtraction sentence for any given situation involving the separation of sets, comparison of sets, or missing addend.

4. Develop and employ appropriate vocabulary and symbols to describe addition and subtraction--addition, plus, sum (+); subtraction, minus, difference (-); equal (=).

5. Demonstrate, through the use of manipulatives, that addition and subtraction are inverse operations. (Adding 3 apples and 4 apples gives you 7 apples.)*

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6. Demonstrate, through the use of manipulatives, the commutative property of addition. (Adding 3 apples to 4 apples gives the same sum as adding 4 apples to 3 apples.)*

7. Recognize and employ the strategy that zero is the identity element for addition and subtraction. (3 + 0 = 3; 3 - 0 = 3)

STANDARD 5010-08	The students will demonstrate ability in computational techniques through the use of paper and pencil, mental math, estimation, and technology to solve problems.

PURPOSE: The purpose of computation is to solve problems. While computation remains important in mathematics, as well as in the students' everyday lives, advances in technology require us to rethink how computation is done today. In many situations, answers are estimated or computed mentally, and we must prepare students to function in these situations. Students must also discover the usefulness of calculators in solving problems involving large numbers and tedious calculations. While proficiency with paper and pencil computation is still important, it cannot continue to dominate the mathematics curriculum. Other equally important mathematical topics and skills must also be learned to enable students to function as members of society in a highly technological world of the future and be prepared to pursue the careers of their choice.

The memorization of basic facts is necessary, but basic fact memorization should be incorporated into a truly rich curriculum rather than be its primary focus.

OBJECTIVES

5010-0801.	Model, explain, and develop reasonable proficiency with basic facts and algorithms.
5010-0802.	Employ a variety of mental computation and estimation techniques.
5010-0803.	Demonstrate the ability to use calculators in appropriate computational situations.
5010-0804.	Select and use computation techniques appropriate to specific problems and determine whether the results are reasonable.

SKILLS AND STRATEGIES

1. Demonstrate knowledge of basic addition facts with sums to 12.

2. Demonstrate knowledge of basic subtraction facts with minuends to 12.

3. Add two and three addends with sums to 18 by using manipulatives and/or number lines.

4. Introduce addition of two-digit numerals using manipulatives.*

5. Select and use computation techniques appropriate to specific problems (paper and pencil algorithms, calculators, or mental computation) and determine whether the results are reasonable.*

6. Introduce the mental math strategy of matching up compatible numbers (7 + 4 + 3 + 6 = 10 + 10). Match the 7 and 3 to get 10 and match the 6 and 4 to get 10.*

STANDARD 5010-09	**The students will use geometry to explore the relationship of objects in the world in which we live.**

PURPOSE: The study of geometry is an important part of the mathematics curriculum. Geometry helps us represent and describe the world in which we live. It should include investigations involving two- and three-dimensional models. In learning geometry, students need to investigate, experiment, and explore with everyday objects and with manipulatives.

OBJECTIVES

5010-0901.	Describe, model, draw, and classify shapes.
5010-0902.	Investigate and predict the results of combining, subdividing, and changing shapes.
5010-0903.	Develop spatial sense.
5010-0904.	Relate geometric ideas to number and measurement ideas.
5010-0905.	Recognize and appreciate geometry in the world.

SKILLS AND STRATEGIES

1. Classify objects according to attributes such as size, shape, and color; describe these attributes by using the students' natural language.*

2. Identify and produce circles, squares, rectangles, trapezoids, parallelograms, rhombi, and triangles; find examples in the students' environment.*

3. Recognize a figure regardless of its orientation. (A triangle is still a triangle when rotated or flipped.)

4. Combine shapes to create two- or three-dimensional figures by using blocks or other manipulatives; find examples in the students' environment.*

5. Describe spatial relationships such as above, below, on, between, and behind by using pictures and manipulatives.*

STANDARD **5010-10**	**The students will understand that measurement is the comparing of objects with nonstandard and standard units such as U.S. Common and metric.**

PURPOSE: Measurement is of central importance to the curriculum because of its power to help students see that mathematics is useful in everyday life and to help them develop many mathematical concepts and skills. Measurement is a natural context in which to introduce the need for learning about fractions and decimals, and it encourages students to be actively involved in discussing and solving problems.

Instruction at the K-4 level emphasizes the importance of establishing a firm foundation in the basic underlying concepts and skills of measurement. Students should understand that measurement is never exact.

OBJECTIVES

5010-1001. Understand the attributes of length, capacity, weight, area, volume, time, temperature, and angle.

5010-1002. Develop the process of measuring and concepts related to units of measurement.

5010-1003. Make and use estimates of measurement.

5010-1004. Make and use measurements in problem and everyday situations.

SKILLS AND STRATEGIES

1. Estimate and measure the length, weight/mass, and capacity/volume of objects by using non-standard units. (My pencil is as long as seven paper clips. My eraser is as heavy as ____ lima beans.)*
2. Recognize and explain the need for uniform units of measurement.*
3. Determine appropriate devices for measuring length, weight/mass, capacity/volume, time, and temperature.
4. Compare objects by specified attributes such as length, weight/mass, capacity/volume, or temperature.
5. Estimate and measure the length of objects to the nearest centimeter and to the nearest inch.
6. Name the days of the week and the months of the year in order.
7. Tell time given clocks showing times in hours and half hours.
8. Identify pennies, nickels, dimes, and quarters and give the value of each.

STANDARD 5010-11 **The students will collect, organize, describe, display, and interpret data while making decisions and predictions based on that data.**

PURPOSE: Collecting, organizing, describing, displaying, and interpreting data, as well as making decisions and predictions on the basis of that information, are skills that are increasingly important in a society based on technology and communication. The study of statistics and probability highlights the importance of questioning, conjecturing, and searching for relationships when formulating and solving real-world problems.

OBJECTIVES

5010-1101. Collect, organize, and describe data.

5010-1102. Construct, read, and interpret displays of data.

5010-1103. Formulate and solve problems that involve collecting and analyzing data.

5010-1104. Explore concepts of chance.

SKILLS AND STRATEGIES

1. Collect and organize information from the students' environment.*
2. Construct and interpret real and picture graphs.
3. Given appropriate data, predict which outcomes are likely.*

STANDARD 5010-12 **The students will use knowledge of fractions and decimals to describe real-world phenomena and apply it to problems.**

PURPOSE: Fractions and decimals represent a significant extension of students' knowledge about numbers. When students possess a sound understanding of fraction and decimal concepts, they can use this knowledge to describe real-world phenomena and apply it to problems involving measurement, probability, and statistics. An understanding of fractions and decimals broadens students' awareness of the usefulness and power of numbers and extends their knowledge of the number system. It is critical in grades K-4 to develop concepts and relationships that will serve as a foundation for more advanced concepts and skills.

The K-4 instruction should help students understand fractions and decimals, explore their relationship, and build initial concepts about order and equivalence. It is crucial that physical materials, diagrams, and real-world situations in conjunction with ongoing efforts to relate their learning experiences to oral language and symbols be used in instruction.

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OBJECTIVES

5010-1201. Develop concepts of fractions, mixed numbers, and decimals.

5010-1202. Develop number sense for fractions and decimals.

5010-1203. Relate fractions to decimals and find equivalent fractions through the use of models.

5010-1204. Apply fractions and decimals to problem situations.

SKILLS AND STRATEGIES

1. Identify regions divided into congruent parts.
2. Divide regions into congruent parts.*
3. Specify a shaded portion as "________ out of________ parts" when given a region divided into six or fewer congruent parts.
4. Specify a subset as "__________ out of__________ parts" when given a set of six or fewer objects.

STANDARD 5010-13	**The students will identify and work with patterns to understand how mathematics applies to the real world.**

PURPOSE: Patterns are everywhere. Students who are encouraged to look for patterns and to express them mathematically begin to understand how mathematics applies to the world in which they live. Identifying and working with a wide variety of patterns helps students to develop the ability to classify and organize information. Relating patterns in numbers, geometry, and measurement helps them understand connections among mathematical topics. Such connections foster the kind of mathematical thinking that serves as a foundation for the more abstract ideas studied in the later grades.

OBJECTIVES

5010-1301. Recognize, describe, extend, and create a wide variety of patterns.

5010-1302. Represent and describe mathematical relationships.

5010-1303. Explore the use of variables and open sentences to express relationship.

SKILLS AND STRATEGIES

1. Identify, duplicate, create, and describe patterns using objects with attributes such as size, shape, and color.*

2. Extend a repeating pattern.*
3. Label the repeating pattern (ABAB, ABBA, etc.).
4. Create a number pattern by skip counting.*
5. Identify patterns in the real world. (Days of the week, months of the year)

MATHEMATICS LEVEL 2

MATH LEVEL 2

SIS NUMBER: 5020
SIS CODE: MA

STANDARD 5020-01	**The students will apply mathematical concepts and skills to solve problems they encounter in daily living.**

PURPOSE: Problem solving should be the central focus of the mathematics curriculum. As such, it is a primary goal of all mathematics instruction and is an integral part of all mathematical activity. Problem solving is not a distinct topic, but a process that should permeate the entire program and provide the context in which concepts and skills can be learned. Students should have many experiences in creating problems from real-world activities, organized data, and equations.

OBJECTIVES

5020-0101.	Develop and apply problem-solving approaches to investigate and understand mathematical content.
5020-0102.	Formulate problems from everyday and mathematical situations.
5020-0103.	Develop and apply strategies to solve a wide variety of problems.
5020-0104.	Verify and interpret results with respect to the original problem.
5020-0105.	Acquire confidence in using mathematics meaningfully.

SKILLS AND STRATEGIES

1. Solve a variety of problems (application, puzzle problems, open-ended, patterning, multi-step, etc.).

2. Demonstrate an understanding of a problem by restating it in the students' own words.*

3. Formulate a plan to solve a problem by using one or more of the following strategies:*

   Act out a story.
   Use manipulatives or models.
   Draw a picture.
   Look for a pattern.

4. Create a problem and state it orally when given a picture, a model, or a real-life situation.*

5. Determine if the answer to a problem is reasonable.*

STANDARD 5020-02	**The students will show understanding and application of mathematical concepts and justification of solutions to problems by communicating in oral, pictorial, and/or written form.**

PURPOSE: This standard highlights the need to involve students individually in cooperative learning groups actively doing mathematics. Exploring, investigating, describing, and explaining mathematical ideas promotes communication. Teachers facilitate this process when they pose probing questions and invite students to explain their thinking.

OBJECTIVES

5020-0201.	Relate physical materials, pictures, and diagrams to mathematical ideas.
5020-0202.	Reflect on and clarify thinking about mathematical ideas and situations.
5020-0203.	Relate everyday language to mathematical language and symbols.
5020-0204.	Represent, discuss, read, write, and listen to mathematical ideas as a vital part of learning and using mathematics.

SKILLS AND STRATEGIES

1. Demonstrate an understanding of a problem by restating it in the students' own words. (This is also in problem solving.)*
2. Represent mathematical topics studied at this grade level by drawing pictures or using objects.*
3. Discuss, read, and write about mathematical topics presented at this grade level. (Demonstrate to another student how to use base ten materials to model addition.)*
4. Develop mathematical vocabulary and symbols appropriate to this grade level and relate them to the students' informal language.
5. Discuss and write about attitudes concerning mathematical topics and lessons. (Possible journal entries: What I liked best about this lesson. What was easy and what was difficult about this lesson.)*

STANDARD 5020-03	**The students will explain and justify logical reasoning strategies when working through (learning) a mathematical concept or solving a problem.**

PURPOSE: A climate should be established in the classroom that places critical thinking at the heart of instruction. Both teachers' and students' statements should be open to question, reaction, and elaboration from others in the classroom. Such climate depends on all members of the class expressing genuine respect and support for one another's ideas. Students need to know that being able to explain and justify their thinking is necessary and that how a problem is solved is as important as its answer. This climate is established when students have opportunities to apply their reasoning skills and when justifying one's thinking is an expected component of problem discussions.

OBJECTIVES

5020-0301.	Draw conclusions about mathematics.
5020-0302.	Apply models, known facts, properties, and relationships to explain their thinking.
5020-0303.	Justify their answers and solution processes.
5020-0304.	Develop patterns and establish relationships in order to analyze mathematical situations.
5020-0305.	Recognize the interrelatedness of mathematical concepts (mathematics makes sense).

SKILLS AND STRATEGIES

1. Manipulate objects or drawings to justify the answer to a problem.*

2. Describe the relationship between numbers in a skip counting pattern. (You add two to each number when counting by twos.)

3. Compare and contrast circles, squares, rectangles, triangles, parallelograms, and rhombi.

4. Compare and contrast the characteristics of equilateral triangles with isosceles triangles, equilateral triangles with scalene triangles, and isosceles triangles with scalene triangles.

STANDARD 5020-04	**The students will recognize the interrelatedness of mathematical concepts within the field of mathematics as well as throughout other disciplines, especially as they apply to daily living.**

PURPOSE: Mathematics is often seen by young students as a collection of separate and unrelated ideas. They also see it as unrelated to the other curricular areas and to their own lives. Computation, measurement, statistics, and problem solving tend to be taught in isolation. Students need to recognize the relationships among these various topics. Mathematical ideas also need to be connected to the students' everyday experiences, both in and out of school, so they become aware of the usefulness of mathematics. A classroom in which mathematical situations are explored in all curricular areas, as well as in events from outside the classroom, provides students the opportunity to see that mathematics is a necessary and valuable discipline.

OBJECTIVES

5020-0401.	Link conceptual and procedural knowledge.
5020-0402.	Relate various representations of concepts or procedures to one another.
5020-0403.	Recognize relationships among different topics in mathematics.
5020-0404.	Employ mathematics in other curricular areas.
5020-0405.	Employ mathematics in their daily lives.

SKILLS AND STRATEGIES

1. At appropriate grade levels, **CONNECTIONS** should:

    - Occur between and among physical models, pictorial representations, and abstract symbols.
    - Include relating addition and subtraction, multiplication and division, addition and multiplication, subtraction and division.
    - Include relating geometric models to procedures with numbers such as relationships between measurement and the number line and area models for numbers, including fractions and decimals.

2. Additional **CONNECTIONS** exist and should be developed between math and other curricular areas. Students should:

    - Recognize and develop mathematical situations that arise in literature.
    - Recognize and develop mathematical application that occurs in social studies (graphs, tables, map skills, etc.).

- Recognize and develop uses of math skills and concepts in science (measurement, graphs, data analysis, classification, etc.).
- Recognize and develop relationships between math and art (shapes, proportion, scale, tessellations, etc.).
- Recognize and develop the use of mathematics in music (rhythm patterns, time signatures, note values, etc.).
- Develop and use mathematics in the study of health and physical education (heart rhythms, blood pressure, calories, scores and measurements in games, etc.).

STANDARD 5020-05	**The students will employ estimation strategies in order to demonstrate flexibility in working with numbers and measurement as they relate to the students' everyday lives.**

PURPOSE: Estimation presents students with another dimension of mathematics. Terms such as "about," "near," "closer to," "between," and "a little less than" illustrate that mathematics involves more than exactness. Estimation interacts with number sense and spatial sense to help students develop insights into concepts and procedures, flexibility in working with numbers and measurements, and an awareness of reasonable results. Estimation skills and understanding enhance the abilities of students to deal with everyday quantitative situations.

OBJECTIVES

5020-0501.	Explore and develop estimation strategies.
5020-0502.	Recognize when it is appropriate to estimate.
5020-0503.	Determine the reasonableness of results.
5020-0504.	Apply estimation strategies in working with quantities, measurement, computation, and problem solving.

SKILLS AND STRATEGIES

1. Estimate quantities to 100 using a referent set. (Here are ten Valentine candies. About how many candies are in this jar?)
2. Compare measurements of length with a referent. (The garden is four paces wide. About how many paces wide is the lawn?)

STANDARD 5020-06 **The students will demonstrate an understanding of numbers (number sense) as they apply to the students' everyday world.**

PURPOSE: Students must understand numbers if they are to make sense of the ways numbers are used in their everyday world. They need to use numbers to quantify, identify location, identify a specific object in a collection, name, and measure. Furthermore, an understanding of place value is crucial for later work with numbers and computation concepts.

Students come to understand number meanings gradually. To encourage their understanding, teachers can offer classroom experiences in which students first manipulate physical objects and then use their own language to explain their thinking.

OBJECTIVES

5020-0601. Construct number meanings through real-world experiences and the use of physical materials.

5020-0602. Demonstrate an understanding of our numeration system by relating patterning, counting, grouping, and place-value concepts.

5020-0603. Develop number sense and interpret the multiple uses of numbers encountered in the real world.

SKILLS AND STRATEGIES

1. Identify, read, and write a three-digit numeral given a physical model or an illustration of a place value model.*
2. Identify and write a three-digit numeral when given the number of hundreds, tens, and ones.*
3. Identify the place value position of hundreds, tens, and ones when given a three-digit numeral.
4. Write numbers to 999 in expanded form.*
5. Identify even and odd numbers to 20 using a physical model.*
6. Count by ones, twos, fives, and tens and recognize these counting patterns in numbers to 1,000.
7. Designate position by using ordinal numbers first through tenth.
8. Order a set of numerals from smallest to largest using numbers to 99.
9. Identify the whole number immediately before or after any number to 999.

10. Identify the number that is ten more or ten fewer than any number to 999.

11. Compare any two numbers from 0 to 99 using the symbols greater than (>) less than (<), and equal to (=).

12. Manipulate objects to demonstrate multiple ways of representing a number. (Fourteen can be represented as 10 and 4 ones, 2 sevens, one less than 15, or an even number.)*

13. Apply number skills to sets of objects in the environment. (Use "counting" by twos to determine the number of eyes in the classroom.)

STANDARD 5020-07	**The students will relate combinations of numbers to other numbers by establishing relationships among operations and by acquiring insights into the effects of performing an operation on a pair or set of numbers.**

PURPOSE: Understanding the fundamental operations of addition, subtraction, multiplication, and division is central to knowing mathematics. One essential component of what it means to understand an operation is recognizing conditions in real-world situations that indicate the operation would be useful in those situations. Other components include building an awareness of models and the properties of an operation, seeing relationships among operations, and acquiring insight into the effects of an operation on a pair of numbers. These four components are aspects of operation sense.

OBJECTIVES

5020-0701.	Develop meaning for the operations by modeling and discussing a rich variety of problem situations.
5020-0702.	Recognize and employ a wide variety of problem structures that can represent a single operation.
5020-0703.	Relate the mathematical language and symbolism of operations to problem situations and informal language.
5020-0704.	Develop operation sense.

SKILLS AND STRATEGIES

1. Identify conditions in real-world situations that would indicate joining or separating of sets.

2. Construct models which relate counting patterns (twos, threes, and fives) to repeated addition of an equal number of objects.*

3. Organize sets of objects into smaller sets containing equal amounts.*

4. Write an addition sentence for any given situation involving the joining of sets.

5. Write a subtraction sentence for any given situation involving the separation of sets, comparison of sets, or missing addend.

6. Develop and employ appropriate vocabulary and symbols to describe addition and subtraction--addition, plus, sum, addends (+); subtraction, minus, difference (-); equals (=).

7. Demonstrate through the use of manipulatives that addition and subtraction are inverse operations. (Adding 7 blocks and 4 blocks gives you 11 blocks. If you have 11 blocks and you give 4 away, you will have 7 blocks.)*

8. Demonstrate, through the use of manipulatives, the commutative and associative properties of addition.

$$\Delta\Delta\Delta + \Delta\Delta = \Delta\Delta + \Delta\Delta\Delta, \text{ commutative}$$

$$(\bullet\bullet + \bullet\bullet\bullet) + \bullet\bullet\bullet\bullet = \bullet\bullet + (\bullet\bullet\bullet + \bullet\bullet\bullet\bullet), \text{ associative}$$

9. Recognize and employ the strategy that zero is the identity element for addition. (3 + 0 = 3; 3 - 0 = 3)

STANDARD 5020-08	**The students will demonstrate ability in computational techniques through the use of paper and pencil, mental math, estimation, and technology to solve problems.**

PURPOSE: The purpose of computation is to solve problems. While computation remains important in mathematics, as well as in the students' everyday lives, advances in technology require us to rethink how computation is done today. In many situations, answers are estimated or computed mentally, and we must prepare students to function in these situations. Students must also discover the usefulness of calculators in solving problems involving large numbers and tedious calculations. While proficiency with paper and pencil computation is still important, it cannot continue to dominate the mathematics curriculum. Other equally important mathematical topics and skills must also be learned to enable students to function as members of society in a highly technological world of the future and be prepared to pursue the careers of their choice.

The memorization of basic facts is necessary, but basic fact memorization should be incorporated into a truly rich curriculum rather than be its primary focus.

OBJECTIVES

5020-0801. Model, explain, and develop reasonable proficiency with basic facts and algorithms.

5020-0802. Employ a variety of mental computation and estimation techniques.

5020-0803. Demonstrate the ability to use calculators in appropriate computational situations.

5020-0804. Select and use computation techniques appropriate to specific problems and determine whether the results are reasonable.

SKILLS AND STRATEGIES

1. Demonstrate knowledge of basic addition facts with sums to 18.
2. Demonstrate knowledge of basic subtraction facts with minuends to 18.
3. Determine the missing addend in a given problem.
4. Demonstrate algorithms for addition and subtraction of two-digit numerals through the use of manipulatives.*
5. Add and subtract two-digit numerals with and without regrouping.
6. Select and use computation techniques appropriate to specific problems (paper-and-pencil algorithms, calculators, or mental computation) and determine whether the results are reasonable.*
7. Introduce the mental math strategy of matching up compatible numbers (27 + 34 + 13 + 46 = 40 + 80). Match the 27 and 13 to get 40 and match the 46 and 34 to get 80.*

STANDARD 5020-09 **The students will use geometry to explore the relationship of objects in the world in which we live.**

PURPOSE: The study of geometry is an important part of the mathematics curriculum. Geometry helps us represent and describe the world in which we live. It should include investigations involving two- and three-dimensional models. In learning geometry, students need to investigate, experiment, and explore with everyday objects and with manipulatives.

OBJECTIVES

5020-0901. Describe, model, draw, and classify shapes.

5020-0902. Investigate and predict the results of combining, subdividing, and changing shapes.

5020-0903. Develop spatial sense.

5020-0904. Relate geometric ideas to number and measurement ideas.

5020-0905. Recognize and appreciate geometry in the world.

SKILLS AND STRATEGIES

1. Identify, describe, and make circles, squares, rectangles, parallelograms, rhombi, trapezoids, and triangles; and find examples in the students' environment.*
2. Recognize a figure regardless of its orientation. (A triangle is still a triangle when rotated or flipped.)
3. Fold and cut geometric shapes into equal parts.*
4. Combine shapes to create two- or three-dimensional figures by using blocks or other manipulatives; describe the resulting figure.*
5. Identify and describe spheres, cubes, cylinders, and cones; find examples in the students' environment.*
6. Relate cubes and cylinders to the two-dimensional shapes from which they were created.*

STANDARD 5020-10

The students will understand that measurement is the comparing of objects with nonstandard and standard units such as U.S. Common and metric.

PURPOSE: Measurement is of central importance to the curriculum because of its power to help students see that mathematics is useful in everyday life and to help them develop many mathematical concepts and skills. Measurement is a natural context in which to introduce the need for learning about fractions and decimals, and it encourages students to be actively involved in discussing and solving problems.

Instruction at the K-4 level emphasizes the importance of establishing a firm foundation in the basic underlying concepts and skills of measurement. Students should understand that measurement is never exact.

OBJECTIVES

5020-1001. Understand the attributes of length, capacity, weight, area, volume, time, temperature, and angle.

5020-1002. Develop the process of measuring and concepts related to units of measurement.

5020-1003. Make and use estimates of measurement.

5020-1004. Make and use measurements in problem and everyday situations.

SKILLS AND STRATEGIES

1. Estimate and measure the length, weight/mass, and capacity/volume of objects by using non-standard units. (My pencil is as long as seven paper clips. My scissors are as heavy as ________ lima beans.)*

2. Develop the concept of area by covering surfaces. (My desk can be covered with 16 tiles.)*

3. Determine appropriate devices for measuring length, weight/mass, capacity/volume, time, and temperature.

4. Compare objects and measurements to a given reference point using attributes such as length, weight/mass, capacity/volume, or temperature. (My bed is about two meters long. A quart is less than a gallon.)

5. Estimate and measure the length of objects or line segments to the nearest inch or foot and to the nearest centimeter or meter.

6. Measure the perimeter of regions in the environment using non-standard units.*

7. Estimate and measure weight/mass of objects to the nearest pound and to the nearest kilogram.*

8. Estimate and measure capacity/volume using cups, pints, and quarts and using liters.*

9. Measure time in hours, half-hours, quarter-hours, days, weeks, months, and years.

10. Determine the value of combinations of pennies, nickels, dimes, and/or quarters which total a dollar or less.

11. Determine if an item of a given price can be purchased with a given combination of coins.

12. Identify the value of dollars.

13. Use the cent (¢), dollar ($), and decimal (.) symbols when writing values of money.

14. Read a thermometer using the Fahrenheit and Celsius scales.

STANDARD 5020-11 **The students will collect, organize, describe, display, and interpret data while making decisions and predictions based on that data.**

PURPOSE: Collecting, organizing, describing, displaying, and interpreting data, as well as making decisions and predictions on the basis of that information, are skills that are increasingly important in a society based on technology and communication. The study of statistics and probability highlights the importance of questioning, conjecturing, and searching for relationships when formulating and solving real-world problems.

OBJECTIVES

5020-1101. Collect, organize, and describe data.

5020-1102. Construct, read, and interpret displays of data.

5020-1103. Formulate and solve problems that involve collecting and analyzing data.

5020-1104. Explore concepts of chance.

SKILLS AND STRATEGIES

1. Collect data from the students' environment.*
2. Construct and interpret picture graphs, tally sheets, and bar graphs.*
3. Write a story problem using information from a graph.*
4. Explore games of chance and probability. (If the bag contains one red marble and two blue marbles, which color will most likely be chosen?)

STANDARD 5020-12 **The students will use knowledge of fractions and decimals to describe real-world phenomena and apply it to problems.**

PURPOSE: Fractions and decimals represent a significant extension of students' knowledge about numbers. When students possess a sound understanding of fraction and decimal concepts, they can use this knowledge to describe real-world phenomena and apply it to problems involving measurement, probability, and statistics. An understanding of fractions and decimals broadens students' awareness of the usefulness and power of numbers and extends their knowledge of the number system. It is critical in grades K-4 to develop concepts and relationships that will serve as a foundation for more advanced concepts and skills.

The K-4 instruction should help students understand fractions and decimals, explore their relationship, and build initial concepts about order and equivalence. It is crucial that physical materials, diagrams, and real-world situations in conjunction with ongoing efforts to relate their learning experiences to oral language and symbols be used in instruction.

OBJECTIVES

5020-1201.	Develop concepts of fractions, mixed numbers, and decimals.
5020-1202.	Develop number sense for fractions and decimals.
5020-1203.	Relate fractions to decimals and find equivalent fractions through the use of models.
5020-1204.	Apply fractions and decimals to problem situations.

SKILLS AND STRATEGIES

1. Name and write a fraction to represent an indicated portion when given a region divided into ten or fewer congruent parts.*
2. Name and write a fraction to represent a subset when given a set of ten or fewer objects.*
3. Explore with manipulatives the relative size of fractions less than one using 1/2 and 1 as reference points.*
4. Illustrate a given fraction using sets and/or models with congruent regions.*

STANDARD 5020-13 **The students will identify and work with patterns to understand how mathematics applies to the real world.**

PURPOSE: Patterns are everywhere. Students who are encouraged to look for patterns and to express them mathematically begin to understand how mathematics applies to the world in which they live. Identifying and working with a wide variety of patterns helps students to develop the ability to classify and organize information. Relating patterns in numbers, geometry, and measurement helps them understand connections among mathematical topics. Such connections foster the kind of mathematical thinking that serves as a foundation for the more abstract ideas studied in the later grades.

OBJECTIVES

5020-1301.	Recognize, describe, extend, and create a wide variety of patterns.
5020-1302.	Represent and describe mathematical relationships.
5020-1303.	Explore the use of variables and open sentences to express relationship.

SKILLS AND STRATEGIES

1. Identify, duplicate, create, and describe patterns using objects and pictures.*
2. Identify and extend a growing pattern.*
3. Continue a number pattern by using addition (7, 10, 13 . . .).
4. Investigate skip counting and other number patterns by using the constant feature on a calculator.*
5. Identify patterns in the real world (water cycle, seasons).

MATHEMATICS LEVEL 3

MATH LEVEL 3

SIS NUMBER: 5030
SIS CODE: MA

STANDARD 5030-01	**The students will apply mathematical concepts and skills to solve problems they encounter in daily living.**

PURPOSE: Problem solving should be the central focus of the mathematics curriculum. As such, it is a primary goal of all mathematics instruction and is an integral part of all mathematical activity. Problem solving is not a distinct topic, but a process that should permeate the entire program and provide the context in which concepts and skills can be learned. Students should have many experiences in creating problems from real-world activities, organized data, and equations.

OBJECTIVES

5030-0101.	Develop and apply problem-solving approaches to investigate and understand mathematical content.
5030-0102.	Formulate problems from everyday and mathematical situations.
5030-0103.	Develop and apply strategies to solve a wide variety of problems.
5030-0104.	Verify and interpret results with respect to the original problem.
5030-0105.	Acquire confidence in using mathematics meaningfully.

SKILLS AND STRATEGIES

1. Solve a variety of problems (application, puzzle problems, open-ended, patterning, multi-step, etc.).
2. Demonstrate an understanding of a problem by restating it in the students' own words.*
3. Formulate a plan to solve a problem by using one or more of the following strategies:*

    Use manipulatives or models.
    Draw a picture or diagram.
    Look for a pattern.
    Choose the operation.
    Guess and check.

4. Write a number sentence to solve a problem involving addition or subtraction.

5. Use a calculator in appropriate problem-solving situations.

6. Recognize when a problem is similar to others previously solved.

7. Write a problem for others to solve when given a picture, a model, or a real life situation.*

8. Determine if the answer to a problem is reasonable.*

STANDARD 5030-02	**The students will show understanding and application of mathematical concepts and justification of solutions to problems by communicating in oral, pictorial, and/or written form.**

PURPOSE: This standard highlights the need to involve students individually in cooperative learning groups actively doing mathematics. Exploring, investigating, describing, and explaining mathematical ideas promotes communication. Teachers facilitate this process when they pose probing questions and invite students to explain their thinking.

OBJECTIVES

5030-0201.	Relate physical materials, pictures, and diagrams to mathematical ideas.
5030-0202.	Reflect on and clarify thinking about mathematical ideas and situations.
5030-0203.	Relate everyday language to mathematical language and symbols.
5030-0204.	Represent, discuss, read, write, and listen to mathematical ideas as a vital part of learning and using mathematics.

SKILLS AND STRATEGIES

1. Demonstrate an understanding of a problem by restating it in the students' own words. (This is also in problem solving.)*

2. Represent mathematical topics studied at this grade level by drawing pictures or diagrams or by using objects.*

3. Discuss, read, and write about mathematical topics presented at this grade level. (Demonstrate to another student how to use tiles to build an array to represent a multiplication fact.)*

4. Develop mathematical vocabulary and symbols appropriate to this grade level and relate them to the students' informal language.

5. Discuss and write about attitudes concerning mathematics topics and lessons. (Possible journal entries: What I liked best about this lesson. What was easy and what was difficult about this lesson.)*

STANDARD 5030-03	**The students will explain and justify logical reasoning strategies when working through (learning) a mathematical concept or solving a problem.**

PURPOSE: A climate should be established in the classroom that places critical thinking at the heart of instruction. Both teachers' and students' statements should be open to question, reaction, and elaboration from others in the classroom. Such climate depends on all members of the class expressing genuine respect and support for one another's ideas. Students need to know that being able to explain and justify their thinking is necessary and that how a problem is solved is as important as its answer. This climate is established when students have opportunities to apply their reasoning skills and when justifying one's thinking is an expected component of problem discussions.

OBJECTIVES

5030-0301.	Draw conclusions about mathematics.
5030-0302.	Apply models, known facts, properties, and relationships to explain their thinking.
5030-0303.	Justify their answers and solution processes.
5030-0304.	Develop patterns and establish relationships in order to analyze mathematical situations.
5030-0305.	Recognize the interrelatedness of mathematical concepts (mathematics makes sense).

SKILLS AND STRATEGIES

1. Manipulate objects, drawings, or diagrams to justify the answer to a problem.*
2. Compare and contrast geometric figures.
3. Employ knowledge of addition or subtraction to describe the relationship between numbers in a pattern (8, 13, 18, 23 . . . is a pattern created by adding 5 to each number.)

STANDARD 5030-04	**The students will recognize the interrelatedness of mathematical concepts within the field of mathematics as well as throughout other disciplines, especially as they apply to daily living.**

PURPOSE: Mathematics is often seen by young students as a collection of separate and unrelated ideas. They also see it as unrelated to the other curricular areas and to their own lives. Computation, measurement, statistics, and problem solving tend to be taught in isolation. Students need to recognize the relationships among these various topics. Mathematical ideas also need to be connected to the students' everyday experiences, both in and out of school, so they become aware of the usefulness of mathematics. A classroom in which mathematical situations are explored in all curricular areas, as well as in events from outside the classroom, provides students the opportunity to see that mathematics is a necessary and valuable discipline.

OBJECTIVES

5030-0401. Link conceptual and procedural knowledge.

5030-0402. Relate various representations of concepts or procedures to one another.

5030-0403. Recognize relationships among different topics in mathematics.

5030-0404. Employ mathematics in other curricular areas.

5030-0405. Employ mathematics in their daily lives.

SKILLS AND STRATEGIES

1. At appropriate grade levels, **CONNECTIONS** should:

   - Occur between and among physical models, pictorial representations, and abstract symbols.
   - Include relating addition and subtraction, multiplication and division, addition and multiplication, subtraction and division.
   - Include relating geometric models to procedures with numbers such as relationships between measurement and the number line and area models for numbers, including fractions and decimals.

2. Additional **CONNECTIONS** exist and should be developed between math and other curricular areas. Students should:

   - Recognize and develop mathematical situations that arise in literature.
   - Recognize and develop mathematical application that occurs in social studies (graphs, tables, map skills, etc.).

- Recognize and develop uses of math skills and concepts in science (measurement, graphs, data analysis, classification, etc.).
- Recognize and develop relationships between math and art (shapes, proportion, scale, tessellations, etc.).
- Recognize and develop the use of mathematics in music (rhythm patterns, time signatures, note values, etc.).
- Develop and use mathematics in the study of health and physical education (heart rhythms, blood pressure, calories, scores and measurements in games, etc.).

STANDARD 5030-05 **The students will employ estimation strategies in order to demonstrate flexibility in working with numbers and measurement as they relate to the students' everyday lives.**

PURPOSE: Estimation presents students with another dimension of mathematics. Terms such as "about," "near," "closer to," "between," and "a little less than" illustrate that mathematics involves more than exactness. Estimation interacts with number sense and spatial sense to help students develop insights into concepts and procedures, flexibility in working with numbers and measurements, and an awareness of reasonable results. Estimation skills and understanding enhance the abilities of students to deal with everyday quantitative situations.

OBJECTIVES

5030-0501. Explore and develop estimation strategies.

5030-0502. Recognize when it is appropriate to estimate.

5030-0503. Determine the reasonableness of results.

5030-0504. Apply estimation strategies in working with quantities, measurement, computation, and problem solving.

SKILLS AND STRATEGIES

1. Determine when it is appropriate to estimate.
2. Determine when an estimate is reasonable.
3. Estimate quantities using a referent set. (Here are 100 nails. About how many nails are in this package?)
4. Employ estimation strategies to determine if results are reasonable when solving word and real-life problems requiring computation.*

5. Employ estimation strategies to determine if results obtained when using a calculator are reasonable.

6. Employ the following strategies when estimating sums and differences:

   - Making tens (3 + 4 + 7 = 10 + 4).
   - Compatible numbers for addition and subtraction (30 + 47 + 70 = 100 + 47).
   - Front-end estimation (24 + 47 might be estimated by thinking: 20 and 40 are 60, 4 and 7 are over 10, so the sum is a little more than 70).
   - A flexible use of rounding (43 is just under 45 and 21 is just over 20, so the sum is about 65).

STANDARD 5030-06 **The students will demonstrate an understanding of numbers (number sense) as they apply to the students' everyday world.**

PURPOSE: Students must understand numbers if they are to make sense of the ways numbers are used in their everyday world. They need to use numbers to quantify, identify location, identify a specific object in a collection, name, and measure. Furthermore, an understanding of place value is crucial for later work with numbers and computation concepts.

Students come to understand number meanings gradually. To encourage their understanding, teachers can offer classroom experiences in which students first manipulate physical objects and then use their own language to explain their thinking.

OBJECTIVES

5030-0601. Construct number meanings through real-world experiences and the use of physical materials.

5030-0602. Demonstrate an understanding of our numeration system by relating patterning, counting, grouping, and place-value concepts.

5030-0603. Develop number sense and interpret the multiple uses of numbers encountered in the real world.

SKILLS AND STRATEGIES

1. Construct models of numbers to 10,000.*

2. Identify and write a four-digit numeral when given a physical model or an illustration of a place value model.*

3. Identify and write a four-digit numeral when given the number of thousands, hundreds, tens, and ones.*

4. Identify the place value position of thousands, hundreds, tens, and ones when given a four-digit numeral.

5. Write numbers to 9,999 in expanded form.*

6. Identify even and odd numbers to 100.

7. Identify the number that is 10 more or 10 fewer than any number to 9,999.

8. Identify the number that is 100 more or 100 fewer than any number to 9,999.

9. Compare numbers between 1 and 9,999 using the symbols greater than (>), less than (<), and equal to (=).

10. Demonstrate multiple ways to represent a number by using manipulatives. (Fifty can be represented as 5 tens, 2 groups of 25, or 4 tens, and 10 ones.)*

11. Interpret the relative magnitude (size) of numbers. (Thirty-one is large compared to 4, about half as big as 60, close to the number 27.)

12. Apply number skills to sets of objects in the environment. (One brand of dog food costs more than another brand.)

STANDARD 5030-07	**The students will relate combinations of numbers to other numbers by establishing relationships among operations and by acquiring insights into the effects of performing an operation on a pair or set of numbers.**

PURPOSE: Understanding the fundamental operations of addition, subtraction, multiplication, and division is central to knowing mathematics. One essential component of what it means to understand an operation is recognizing conditions in real-world situations that indicate the operation would be useful in those situations. Other components include building an awareness of models and the properties of an operation, seeing relationships among operations, and acquiring insight into the effects of an operation on a pair of numbers. These four components are aspects of operation sense.

OBJECTIVES

5030-0701. Develop meaning for the operations by modeling and discussing a rich variety of problem situations.

5030-0702. Recognize and employ a wide variety of problem structures that can represent a single operation.

5030-0703. Relate the mathematical language and symbolism of operations to problem situations and informal language.

5030-0704. Develop operation sense.

SKILLS AND STRATEGIES

1. Develop models (number lines, manipulatives) and pictures to represent multiplication as repeated addition and arrays.*
2. Develop models (number lines, manipulatives) and pictures to represent division as sharing and repeated subtraction.*
3. Determine which operation (addition, subtraction, or multiplication) can be used to solve problems involving computation.
4. Represent any given situation involving the separation of sets, comparison of sets, or missing addend as subtraction.
5. Write a multiplication sentence for any given situation involving repeated addition and arrays.
6. Develop and employ appropriate vocabulary and symbols to describe addition, subtraction, and multiplication--addition, plus, sum, addends (+); subtraction, minus, difference (-); equal (=); equation, multiplication, factor, products (x).
7. Demonstrate through the use of manipulatives that multiplication and division are inverse operations. ($3 \times 4 = 12; 12 \div 4 = 3$)*
8. Demonstrate through the use of manipulatives the commutative and associative properties of multiplication. [$3 \times 4 = 4 \times 3; 3 \times (4 \times 5) = (3 \times 4) \times 5$]*
9. Recognize and employ the strategy that one is the identify element for multiplication and division. ($7 \times 1 = 7; 7 \div 1 = 7$)*
10. Recognize and employ the strategy that when zero is a factor, the product is zero.*

STANDARD 5030-08	**The students will demonstrate ability in computational techniques through the use of paper and pencil, mental math, estimation, and technology to solve problems.**

PURPOSE: The purpose of computation is to solve problems. While computation remains important in mathematics, as well as in the students' everyday lives, advances in technology require us to rethink how computation is done today. In many situations, answers are estimated or computed mentally, and we must prepare students to function in these situations. Students must also discover the usefulness of calculators in solving problems involving large numbers and tedious calculations. While proficiency with paper and pencil computation is still important, it cannot continue to dominate the mathematics curriculum. Other equally important mathematical topics and skills must also be learned to enable students to function as members of society in a highly technological world of the future and be prepared to pursue the careers of their choice.

The memorization of basic facts is necessary, but basic fact memorization should be incorporated into a truly rich curriculum rather than be its primary focus.

OBJECTIVES

5030-0801. Model, explain, and develop reasonable proficiency with basic facts and algorithms.

5030-0802. Employ a variety of mental computation and estimation techniques.

5030-0803. Demonstrate the ability to use calculators in appropriate computational situations.

5030-0804. Select and use computation techniques appropriate to specific problems and determine whether the results are reasonable.

SKILLS AND STRATEGIES

1. Demonstrate algorithms for addition and subtraction of three-digit numerals by using manipulatives.*
2. Add and subtract any two numbers less than 1000, including monetary amounts.
3. Demonstrate knowledge of basic multiplication facts through 9 x 9.
4. Provide the missing factor in a multiplication sentence by using basic facts (7 x ___ = 28).
5. Illustrate multiplication of a two-digit numeral by a one-digit multiplier by using manipulatives and pictures.*
6. Select and use computation techniques appropriate to specific problems (paper-and-pencil algorithms, calculators, or mental computation) and determine whether the results are reasonable.*
7. Introduce the mental math strategy of matching compatible numbers (27 + 34 + 46 + 13 = 40 + 80). Match the 27 and 13 to get 40 and match the 46 and 34 to get 80.*
8. Introduce the mental math strategies of front-end estimating, rounding, and thinking money to solve problems.*

STANDARD 5030-09	**The students will use geometry to explore the relationship of objects in the world in which we live.**

PURPOSE: The study of geometry is an important part of the mathematics curriculum. Geometry helps us represent and describe the world in which we live. It should include investigations involving two- and three-dimensional models. In learning geometry, students need to investigate, experiment, and explore with everyday objects and with manipulatives.

OBJECTIVES

5030-0901.	Describe, model, draw, and classify shapes.
5030-0902.	Investigate and predict the results of combining, subdividing, and changing shapes.
5030-0903.	Develop spatial sense.
5030-0904.	Relate geometric ideas to number and measurement ideas.
5030-0905.	Recognize and appreciate geometry in the world.

SKILLS AND STRATEGIES

1. Identify, describe, and make rhombi and kites and find examples in the students' environment.*
2. Describe two-dimensional figures by using the following terms: point, line, and line segment.*
3. Identify and describe angles.*
4. Determine if an angle is equal to, greater than, or less than a right angle by using the corner of a rectangle to make a comparison.
5. Compare and contrast two figures to determine if they are congruent.
6. Fold and cut figures into equal parts to demonstrate symmetry.
7. Combine shapes to create two- or three-dimensional figures by using blocks or other manipulatives; describe the resulting figure.*
8. Identify, make, and describe cubes, pyramids, and cylinders; relate them to the two-dimensional shapes from which they were created.*
9. Identify and describe spheres, and relate them to objects in the students' environment.*

STANDARD 5030-1.0 **The students will understand that measurement is the comparing of objects with nonstandard and standard units such as U.S. Common and metric.**

PURPOSE: Measurement is of central importance to the curriculum because of its power to help students see that mathematics is useful in everyday life and to help them develop many mathematical concepts and skills. Measurement is a natural context in which to introduce the need for learning about fractions and decimals, and it encourages students to be actively involved in discussing and solving problems.

Instruction at the K-4 level emphasizes the importance of establishing a firm foundation in the basic underlying concepts and skills of measurement. Students should understand that measurement is never exact.

OBJECTIVES

5030-1001. Understand the attributes of length, capacity, weight, area, volume, time, temperature, and angle.

5030-1002. Develop the process of measuring and concepts related to units of measurement.

5030-1003. Make and use estimates of measurement.

5030-1004. Make and use measurements in problem and everyday situations.

SKILLS AND STRATEGIES

1. Recognize that two systems of standard measurement are used: metric and U. S. Common.
2. Determine appropriate devices and units for measuring length, weight/mass, capacity/volume, time, and temperature.
3. Estimate and measure the length of objects or line segments to the nearest half-inch, foot, or yard and to the nearest centimeter or meter.*
4. Describe the relationship of centimeter to meter.*
5. Estimate and measure the perimeter of regions in the environment and the perimeter of two-dimensional figures using non-standard or standard units.*
6. Estimate and measure the area of a surface by covering with tiles or other non-standard units.*
7. Estimate and measure weight/mass of objects to the nearest ounce or pound and to the nearest gram or kilogram.*

8. Estimate and measure capacity/volume using cups, pints, quarts, or gallons and using milliliters or liters.*

9. Tell time to the nearest minute.

10. Determine the value of combinations of coins and bills which total five dollars or less.

11. Determine if an item of a given price can be purchased with a given combination of coins and bills.

12. Use the cent (¢), dollar ($), and decimal (.) symbols when writing values of money.

13. Read a thermometer using the Fahrenheit and Celsius scales; make decisions based on this information. (I will or will not need a coat today.)

STANDARD 5030-11	**The students will collect, organize, describe, display, and interpret data while making decisions and predictions based on that data.**

PURPOSE: Collecting, organizing, describing, displaying, and interpreting data, as well as making decisions and predictions on the basis of that information, are skills that are increasingly important in a society based on technology and communication. The study of statistics and probability highlights the importance of questioning, conjecturing, and searching for relationships when formulating and solving real-world problems.

OBJECTIVES

5030-1101.	Collect, organize, and describe data.
5030-1102.	Construct, read, and interpret displays of data.
5030-1103.	Formulate and solve problems that involve collecting and analyzing data.
5030-1104.	Explore concepts of chance.

SKILLS AND STRATEGIES

1. Collect data from the students' environment.*
2. Construct and interpret picture graphs, tally sheets, and bar graphs.*
3. Write a story problem using information from a graph.*

4. Explore games of chance and probability. (If the bag contains two red marbles and five blue marbles, which color will most likely be chosen. This should involve the concept of with and without replacement.)*

STANDARD 5030-12	**The students will use knowledge of fractions and decimals to describe real-world phenomena and apply it to problems.**

PURPOSE: Fractions and decimals represent a significant extension of students' knowledge about numbers. When students possess a sound understanding of fraction and decimal concepts, they can use this knowledge to describe real-world phenomena and apply it to problems involving measurement, probability, and statistics. An understanding of fractions and decimals broadens students' awareness of the usefulness and power of numbers and extends their knowledge of the number system. It is critical in grades K-4 to develop concepts and relationships that will serve as a foundation for more advanced concepts and skills.

The K-4 instruction should help students understand fractions and decimals, explore their relationship, and build initial concepts about order and equivalence. It is crucial that physical materials, diagrams, and real-world situations in conjunction with ongoing efforts to relate their learning experiences to oral language and symbols be used in instruction.

OBJECTIVES

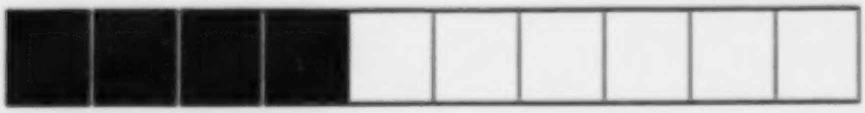
5030-1201.	Develop concepts of fractions, mixed numbers, and decimals.
5030-1202.	Develop number sense for fractions and decimals.
5030-1203.	Relate fractions to decimals and find equivalent fractions through the use of models.
5030-1204.	Apply fractions and decimals to problem situations.

SKILLS AND STRATEGIES

1. Name and write a fraction to represent a portion of a unit when given congruent line segments or regions divided into congruent parts.*
2. Name and write a mixed numeral when given a model of a problem.*
3. Name and write a fraction to represent a subset when given a set of objects.*
4. Identify and generate equivalent fractions by using models or diagrams.*
5. Determine which is larger or smaller by using physical models or illustrations when given a pair of fractions.*

6. Name and write a decimal fraction and a common fraction to represent tenths when given physical models such as base ten materials and/or money.*

4 out of 10 = 0.4 = 4/10



7. Count and continue patterns using decimal fractions to tenths when given models and illustrations. (. . . 0.5, 0.6, 0.7 . . .)*

STANDARD 5030-13 **The students will identify and work with patterns to understand how mathematics applies to the real world.**

PURPOSE: Patterns are everywhere. Students who are encouraged to look for patterns and to express them mathematically begin to understand how mathematics applies to the world in which they live. Identifying and working with a wide variety of patterns helps students to develop the ability to classify and organize information. Relating patterns in numbers, geometry, and measurement helps them understand connections among mathematical topics. Such connections foster the kind of mathematical thinking that serves as a foundation for the more abstract ideas studied in the later grades.

OBJECTIVES

5030-1301. Recognize, describe, extend, and create a wide variety of patterns.

5030-1302. Represent and describe mathematical relationships.

5030-1303. Explore the use of variables and open sentences to express relationship.

SKILLS AND STRATEGIES

1. Identify, duplicate, extend, create, and describe geometric and numerical patterns.*
2. Create and use tables as a technique for analyzing and reporting patterns.*
3. Continue a number pattern by using addition or subtraction (8, 13, 18, 23 . . and 98, 95, 92 . . .).
4. Investigate addition, subtraction, and other number patterns by using the constant feature on a calculator.*
5. Identify patterns in the real world (traffic patterns, patterns in nature).

APPENDIXES

LEVELS K-3

MATHEMATICS

LEVEL 1

APPENDIX

(Content Areas, Concepts/Skills, Processes)

CONTENT AREAS

Logical Reasoning
Estimation
Number Meanings
Number Operations
Computation
Geometry
Measurement
Data Sets
Fractions and Decimals
Patterns

CONCEPTS/SKILLS

- The students manipulate objects to justify the answer to a problem.
- The students describe objects and patterns created from objects by using attributes such as size, shape, and color.

- Sets (with less than 20 members) can be compared to a referent set using the terms "more than," "less than," and "about the same."
- Measurement of length can be compared with a referent.

- Numbers (up to 100) can be represented by numerals.
- Zero designates the number of elements in the empty set.
- Objects can be sorted into groups of ten.
- Groups of ones and tens can demonstrate place value.
- The place value of a digit can be identified by its position in the ones or tens place.
- Place value (to 99) can be expressed using expanded notation (99 = 90 + 9; 99 = 9 tens + 9 ones).
- Numbers can be counted orally by 1s (to 100), by 2s (to 20), by 5s (to 100), and by 10s (to 100).
- "One more than" and "one less than" can be determined for numbers (to 99).
- The students use objects to order and compare numbers.
- Numbers are used in the student's environment.

- The joining, separating, and comparison of sets occurs in real-world situations.
- An addition sentence can be written for any given situation involving the joining of sets.
- A subtraction sentence can be written for any given situation involving the separation of sets, comparison of sets, or missing addends.
- Addition may be described with the words addition, plus, and sum, and with the symbol (+).
- Subtraction may be described with the words subtraction, minus, and difference, and with the symbol (−).
- Equality may be described with the word equal and the symbol (=).

Level 1

- Addition and subtraction are inverse operations.
- Addition is commutative.
- Zero is the identity element for addition and subtraction.

- The students know basic addition facts (with sums to 12).
- The students know basic subtraction facts (with minuends to 12).
- Manipulatives may be used to add two and three addends (with sums to 18).
- Manipulatives may be used to add two-digit numerals.
- The students select and use computation techniques appropriate to specific problems and determine whether the results are reasonable.
- The students use the mental math strategy of matching up compatible numbers [$7 + 4 + 3 + 6 = (7 + 3) + (6 + 4) = 10 + 10$].

- The students classify objects according to attributes such as size, shape, and color and describe these attributes.
- The students identify and produce circles, squares, rectangles, triangles, trapezoids, parallelograms and rhombi, and find examples in the environment.
- The students recognize a figure regardless of its orientation.
- The students combine shapes to create two- or three-dimensional figures by using manipulatives and find examples in the environment.
- Spatial relationships such as above, below, on, between, and behind can be described by using pictures and manipulatives.

- Measurement is never exact.
- The length, weight/mass, and capacity/volume of objects can be estimated and measured by using non-standard units. (My pencil is as long as 7 paper clips.)
- The students recognize and explain the need for uniform units of measurement.
- The students determine appropriate devices for measuring length, weight/mass, capacity/volume, time, and temperature.
- Objects can be compared by specified attributes such as length, weight/mass, capacity/volume, or temperature.
- The students estimate and measure the length of objects to the nearest centimeter and to the nearest inch.
- The students name the days of the week and the months of the year in order.
- The students tell time with clocks showing times in hours and half hours.
- The students identify pennies, nickels, dimes, and quarters and give the value of each.

- Information from the student's environment can be collected and organized.
- The students construct and interpret real graphs and picture graphs.
- Given appropriate data, the students predict which outcomes are likely.

- The students identify regions divided into congruent parts.
- The students divide regions into congruent parts.
- The students specify a shaded portion as "__________ out of__________ parts" when given a region divided into 6 or fewer congruent parts.
- The students specify a subset as "__________ out of __________ parts" when given a set of 6 or fewer objects.

Level 1

- The students identify, duplicate, describe, and create patterns with attributes such as size, shape, and color.
- The students extend a repeating pattern.
- The students label the repeating pattern (ABAB, ABBA, etc.).
- The students create a number pattern by skip counting.
- Patterns exist in the real world (days of the week, months of the year).

PROCESSES

Identify
Read
Write
Discuss
Manipulate
Demonstrate
Count
Compare
Recognize
Describe
Combine
Estimate
Explain
Collect
Predict
Extend
Label
Duplicate
Interrelate
Add
Subtract
Divide
Measure
Order
Sort
Solve
Classify
Formulate
Create
Construct
Draw
Justify

LEVEL 2

APPENDIX

(Content Areas, Concepts/Skills, Processes)

CONTENT AREAS

Logical Reasoning
Estimation
Number Meanings
Number Operations
Computation
Geometry
Measurement
Data Sets
Fractions and Decimals
Patterns

CONCEPTS/SKILLS

- The students manipulate objects or drawings to justify an answer to a problem.
- The students describe the relationship between numbers in a skip counting pattern.
- The students compare and contrast circles, squares, rectangles, triangles, parallelograms, and rhombi.
- The students compare and contrast the characteristics of equilateral triangles with isosceles triangles, equilateral triangles with scalene triangles, and isosceles triangles with scalene triangles.

- Quantities (to 100) can be estimated using a referent set. (Here are 10 Valentine candies. About how many candies are in this jar?)
- Measurements of length can be compared with a referent. (The garden is 4 paces wide. About how many paces wide is the lawn?)

- The students identify, read, and write a three-digit numeral given a physical model or illustration of a place value model.
- The students identify and write a three-digit numeral when given the number of hundreds, tens, and ones.
- The place value position of hundreds, tens, and ones can be identified when given a three-digit numeral.
- The students write numbers to 999 in expanded form.
- The students identify even and odd numbers (to 20) using a physical model.
- The students count by ones, twos, fives, and tens and recognize these counting patterns in numbers (to 1,000).
- Position can be designated by using ordinal numbers (first through tenth).
- The students order a set of numerals from smallest to largest (to 99).
- The students identify the whole number immediately before or after any number (to 999).
- The students identify the number that is 10 more or 10 fewer than any number (to 999).
- Any two numbers (0 to 99) can be compared using the symbols greater than (>), less than (<), or equal to (=).

Level 2

- Objects can be manipulated to demonstrate multiple ways of representing a number. (Fourteen can be represented as 10 and 4 ones, 2 sevens, one less than 15, or an even number.)
- Number skills can be applied to sets of objects in the environment. (Use counting by twos to determine the number of eyes in the classroom.)

- Conditions exist in real-world situations that indicate joining or separating of sets.
- The students construct models which relate counting patterns (twos, threes, and fives) to repeated addition of an equal number of objects.
- Sets of objects can be organized into smaller sets containing equal amounts.
- An addition sentence can be written for any given situation involving the joining of sets.
- A subtraction sentence can be written for any given situation involving the separation of sets, comparison of sets, or missing addends.
- Addition can be described by the words addition, plus, sum, addends, and the symbol (+).
- Subtraction can be described by the words subtraction, minus, difference, and the symbol (–).
- Equality can be described by the word equal and the symbol (=).
- Addition and subtraction are inverse operations, and this can be demonstrated with manipulatives. (Adding 7 blocks and 4 blocks gives you 11 blocks. If you have 11 blocks and you give 4 away, you will have 7 blocks.)
- The commutative and associative properties of addition can be demonstrated through the use of manipulatives.
- Zero is the identity element for addition.

- The students know basic addition facts (sums to 18).
- The students know basic subtraction facts (minuends to 18).
- The students determine the missing addend in a given problem.
- The students demonstrate algorithms for addition and subtraction of two-digit numerals with manipulatives.
- The students add and subtract two-digit numerals with and without regrouping.
- The students select and use computation techniques appropriate to specific problems and determine whether the results are reasonable.
- The students use the mental math strategy of matching up compatible numbers [$27 + 34 + 13 + 46 = (27 + 13) + (46 + 34) = 40 + 80 = 120$].

- The students identify, describe, and make circles, squares, rectangles, parallelograms, rhombi, trapezoids, and triangles, and find examples in the environment.
- The students recognize a figure regardless of its orientation.
- Geometric shapes can be folded and cut into equal parts.
- Shapes can be combined to create two- or three-dimensional figures with manipulatives, and the students can describe the resulting figure.
- The students identify and describe spheres, cubes, cylinders, and cones, and find examples in the environment.
- The students relate cubes and cylinders to the two-dimensional shapes from which they were created.
- Measurement is never exact.

Level 2

- The length, weight/mass, and capacity/volume of objects can be estimated and measured by using non-standard units. (My pencil is as long as 7 paper clips.)
- The concept of area is illustrated by covering surfaces.
- There are certain appropriate devices for measuring length, weight/mass, capacity/volume, time, and temperature.
- Objects and measurements can be compared to a given reference point using attributes such as length, weight/mass, capacity/volume, or temperature. (My bed is about 2 meters long.)
- The students estimate and measure the length of objects or line segments to the nearest inch or foot and to the nearest centimeter or meter.
- The perimeter of regions in the environment can be measured using non-standard units.
- The weight/mass of objects can be estimated and measured to the nearest pound and to the nearest kilogram.
- Capacity/volume can be estimated and measured using cups, pints, quarts, and liters.
- Time can be measured in hours, half hours, quarter hours, days, weeks, months, and years.
- The value of combinations of pennies, nickels, dimes, and/or quarters (totaling a dollar or less) can be determined.
- The students determine if an item of a given price can be purchased with a given combination of coins.
- The students identify the value of dollars.
- The students use the cent (¢), dollar ($), and decimal (.) symbols when writing values of money.
- The students read a thermometer using the Fahrenheit and Celsius scales.

- The students collect data from the environment.
- The students construct and interpret picture graphs, tally sheets, and bar graphs.
- The students write a story problem using information from a graph.
- The students explore games of chance and probability. (If the bag contains one red marble and two blue marbles, which color will most likely be chosen?)

- A fraction can be named and written to represent an indicated portion when given a region divided into 10 or fewer congruent parts.
- A fraction can be named and written to represent a subset when given a set of 10 or fewer objects.
- The students explore with manipulatives the relative size of fractions less than one using 1/2 and 1 as reference points.
- The students illustrate a given fraction using sets and/or models with congruent regions.

- The students identify, duplicate, create, and describe patterns using objects and pictures.
- The students identify and extend a growing pattern.
- The students continue a number pattern by using addition (7, 10, 13, . . .).
- Skip counting and other number patterns can be investigated by using the constant feature on a calculator.
- Patterns can be identified in the real world (water cycle, seasons).

Level 2

PROCESSES

Solve
Demonstrate
Formulate
Draw
Create
Determine
Develop
Apply
Verify
Interpret
Relate
Reflect
Discuss
Read
Represent
Write
Justify
Recognize
Compare
Contrast
Manipulate
Describe
Link
Interrelate
Use
Explore
Construct
Count
Order
Organize
Add
Subtract
Model
Select
Classify
Predict
Combine
Make
Understand
Measure
Estimate
Collect
Name
Illustrate

LEVEL 3
APPENDIX
(Content Areas, Concepts/Skills, Processes)

CONTENT AREAS
Logical Reasoning
Estimation
Number Meanings
Number Operations
Computation
Geometry
Measurement
Data Sets
Fractions and Decimals
Patterns

CONCEPTS/SKILLS
- The students manipulate objects, drawings, or diagrams to justify the answer to a problem.
- The students compare and contrast geometric figures.
- The students use knowledge of addition and subtraction to describe the relationship between numbers in a pattern. (8, 13, 18, 23, . . . is a pattern created by adding 5 to each number.)

- The students determine when it is appropriate to estimate.
- The students determine when an estimate is reasonable.
- Quantities can be estimated using a referent set. (Here are 100 nails. About how many nails are in this package?)
- Estimation strategies can be employed to determine if results are reasonable when solving word and real-life problems requiring computation.
- Estimation strategies can be employed to determine if results obtained when using a calculator are reasonable.
- The students employ the following strategies when estimating sums and differences:
  - Making tens (3 + 4 + 7 = 10 + 4).
  - Compatible numbers for addition and subtraction (30 + 47 + 70 = 100 + 47).
  - Front-end estimation (24 + 47 might be estimated by thinking: 20 and 40 are 60, 4 and 7 are over 10, so the sum is a little more than 70).
  - Flexible use of rounding (43 is just under 45 and 21 is just over 20, so the sum is about 65).

- The students construct models of numbers (to 10,000).
- A four-digit numeral can be identified when given a physical model or an illustration of a place value model.
- A four-digit numeral can be identified and written when given the number of thousands, hundreds, tens, and ones.
- The students identify the place value position of thousands, hundreds, tens, and ones when given a four-digit numeral.
- The students write numbers (to 9,999) in an expanded form.

Level 3

- The students identify even and odd numbers (to 100).
- The students identify the number that is 10 more or 10 fewer than any number (to 9,999).
- The students identify the number that is 100 more or 100 fewer than any number (to 9,999).
- Numbers (between 1 and 9,999) can be compared using the symbols greater than (>), less than (<), and equal to (=).
- There are many ways to represent a number by using manipulatives. (Fifty can be represented as 5 tens, 2 groups of 25, or 4 tens and 10 ones.)
- The students interpret the relative magnitude (size) of numbers. (31 is large compared to 4, about half as big as 60, and close to the number 27.)

- Models (number lines, manipulatives) and pictures can be used to represent multiplication as repeated addition and arrays.
- Models (number lines, manipulatives) and pictures can be used to represent division as sharing and repeated subtraction.
- The students determine which operation (addition, subtraction, or multiplication) can be used to solve problems involving computation.
- Any given situation involving the separation of sets, comparison of sets, or missing addend can be represented as subtraction.
- A multiplication sentence can be written for any given situation involving repeated addition and arrays.
- Addition can be described by the words addition, plus, sum, addends, and the symbol (+).
- Subtraction can be described by the words subtraction, minus, difference, and the symbol (–).
- Equality can be described by the words equation and equals, and the symbol (=).
- Multiplication can be described by the words multiplication, factor, products, and the symbol (x).
- Multiplication and division are inverse operations and can be demonstrated through use of manipulatives.
- Manipulatives can demonstrate the commutative and associative properties of multiplication.
- One is the identity element for multiplication and division.
- When zero is a factor, the product is zero.

- The students demonstrate algorithms for addition and subtraction of three-digit numerals by using manipulatives.
- The students add and subtract any two numbers (less than 10,000), including monetary amounts.
- The students know basic multiplication facts through 9 x 9.
- The students provide the missing factor in a multiplication sentence by using basic facts.
- The students illustrate multiplication of a two-digit numeral by a one-digit multiplier by using manipulatives and pictures.
- The students select and use computation techniques appropriate to specific problems and determine whether the results are reasonable.
- The students use the mental math strategy of matching compatible numbers [27 + 34 + 46 + 13 = (27 + 13) + (46 + 34) = 40 + 80 = 120].

Level 3

- The students use the mental math strategies of front-end estimating, rounding, and thinking money to solve problems.

- The students identify, describe, and make rhombi and kites, and find examples in the environment.
- Two-dimensional figures can be described by using the terms point, line, and line segment.
- The students identify and describe angles.
- It can be determined if an angle is equal to, greater than, or less than a right angle by using the corner of a rectangle to make a comparison.
- The students compare and contrast two figures to determine if they are congruent.
- Figures can be folded and cut into equal parts to demonstrate symmetry.
- Shapes can be combined to create two- or three-dimensional figures by using manipulatives; the students describes the resulting figure.
- The students identify, make, and describe cubes, pyramids, and cylinders, and relate them to the two-dimensional shapes from which they were created.
- The students identify and describe spheres and relate them to objects in the environment.

- Measurement is never exact.
- Two systems of standard measurement are used: metric and U.S. Common.
- Appropriate devices and units exist for measuring length, weight/mass, capacity/volume, time, and temperature.
- The students estimate and measure the length of objects or line segments to the nearest half-inch, foot, or yard, and to the nearest centimeter or meter.
- The students describe the relationship of centimeter to meter.
- The students estimate and measure the perimeter of regions in the environment and the perimeter of two-dimensional figures using non-standard or standard units.
- The students estimate and measure the area of a surface by covering with tiles or other non-standard units.
- The students estimate and measure weight/mass of objects to the nearest ounce or pound and to the nearest gram or kilogram.
- The students estimate and measure capacity/volume using cups, pints, quarts, or gallons and use milliliters or liters.
- The students tell time to the nearest minute.
- The students determine the value of combinations of coins and bills (totaling $5 or less).
- The students determine if an item of a given price can be purchased with a given combination of coins and bills.
- The symbol for cents (¢), for dollars ($), and the decimal symbol (.) are used when writing values of money.
- The students read a thermometer using the Fahrenheit and Celsius scales and makes decisions based on this information. (I will or will not need a coat today.)
- The students collect data from the environment.
- The students construct and interpret picture graphs, tally sheets, and bar graphs.
- The students write a story problem using information from a graph.
- The students explore games of chance and probability. (If the bag contains 2 red marbles and 5 blue marbles, which color will most likely be chosen? This should involve the concept of with and without replacement.)

Level 3

- The students name and write a fraction that represents a portion of a unit when given congruent line segments or regions divided into congruent parts.
- The students name and write a mixed numeral when given a model of a problem.
- The students name and write a fraction to represent a subset when given a set of objects.
- Equivalent fractions can be identified and generated by using models and diagrams.
- The students determine which is larger or smaller by using physical models or illustrations when given a pair of fractions.
- A decimal fraction and a common fraction can be named and written to represent tenths when physical models such as base ten materials and/or money are given (4 out of 10 = 0.4 = 4/10).
- The students count and continue patterns using decimal fractions to tenths when given models and illustrations (. . . 0.5, 0.6, 0.7 . . .).

- The students identify, duplicate, extend, create, and describe geometric and numerical patterns.
- Tables can be created and used as a technique for analyzing and reporting patterns.
- A number pattern can be continued by using addition or subtraction (8, 13, 18, 23, . . . and 98, 95, 92, . . .).
- The students investigate addition, subtraction, and other number patterns by using the constant feature on a calculator.
- Patterns exist in the real world (traffic patterns, patterns in nature).

PROCESSES

Identify
Read
Write
Describe
Compare
Contrast
Add
Subtract
Multiply
Divide
Measure
Compute
Solve
Construct
Develop
Formulate
Draw
Determine
Represent
Discuss
Relate
Reflect
Link
Recognize
Explore
Estimate
Interpret
Apply
Model
Explain
Select
Organize
Collect
Create

Responsible Healthy Lifestyles

RESPONSIBLE HEALTHY LIFESTYLES

The responsible healthy lifestyles curriculum integrates into a meaningful whole, medical, scientific, behavioral and ethical knowledge, values, and practices which enhance a healthy life. It deals with issues and concerns of the whole person--intellectual, social, emotional, physical, ethical--and integrates findings from medicine, space exploration, science, social science, etc.

A tremendous number of each person's daily decisions directly or indirectly influence the quality and health of one's life. From growth and development to substance abuse, from micro-organism caused illness to positive healthy lifestyles, from childhood through adolescence, responsible healthy lifestyles education focuses on positive health lifestyle choices.

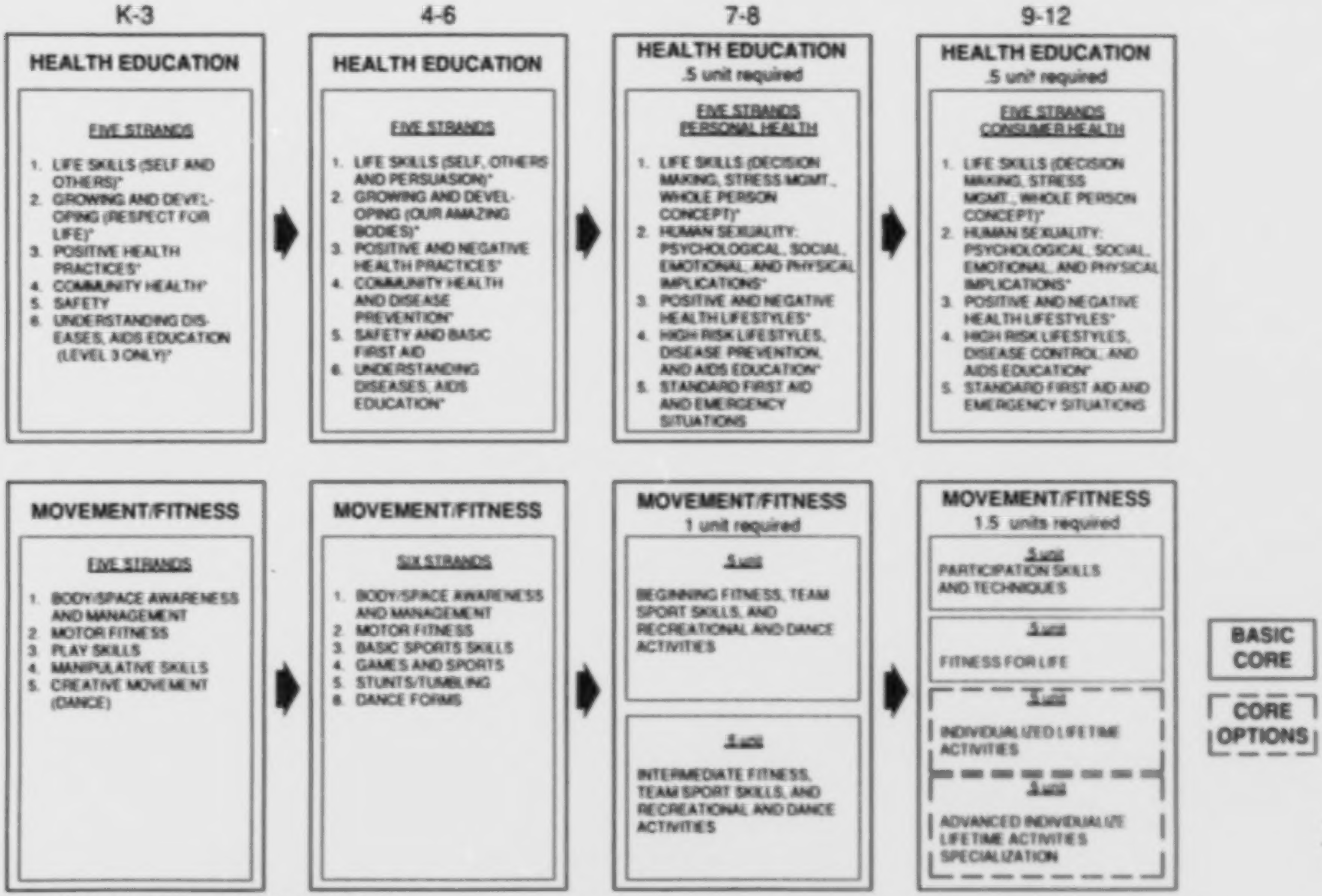
Personal decisions about one's health and the quality of one's life are inescapable. Such decisions must be made every day. They affect the individual, the family, the community, the state, the nation, and the world. Helping children and youth to make wise and wholesome decisions about a wide variety of personal, family, and societal health issues is of paramount importance.

Many decisions made in childhood and youth make a tremendous difference in one's emotional health: selection of foods; respect for the body; respect for birth and the miracle of life; involvement or non-involvement in the use of alcohol, tobacco, and drugs; decisions regarding prevention of diseases; utilization of safety and survival skills; in one's role as a consumer of goods, services, and information; perception of and involvement in community health issues; and in one's maintenance of physical fitness. The school can and should play a significant role in helping students prepare to make such decisions.

The human body was made to move. The technological age of labor- saving devices and sedentary living often detracts from the biological necessity for movement. Many degenerative diseases plaguing Americans have a portion of their roots in sedentary, inactive lifestyles. The vegetative, physically bland life leaves both the young and old susceptible to heart disease, obesity, muscular atrophy, and decreased life expectancy. Thus, living a physically active lifestyle is important to health and wellness.

A school's responsible healthy lifestyles program can and should help students be involved in and adopt a personal lifestyle of regular physical activity. This along with other positive health practices contributes to the quality of life, not only as a student, but also as a future adult.

RESPONSIBLE HEALTHY LIFESTYLES
Health Education, Movement, and Fitness Core



K-3	4-6	7-8	9-12
HEALTH EDUCATION FIVE STRANDS 1. LIFE SKILLS (SELF AND OTHERS)* 2. GROWING AND DEVELOPING (RESPECT FOR LIFE)* 3. POSITIVE HEALTH PRACTICES* 4. COMMUNITY HEALTH* 5. SAFETY 6. UNDERSTANDING DISEASES, AIDS EDUCATION (LEVEL 3 ONLY)*	**HEALTH EDUCATION** FIVE STRANDS 1. LIFE SKILLS (SELF, OTHERS AND PERSUASION)* 2. GROWING AND DEVELOPING (OUR AMAZING BODIES)* 3. POSITIVE AND NEGATIVE HEALTH PRACTICES* 4. COMMUNITY HEALTH AND DISEASE PREVENTION* 5. SAFETY AND BASIC FIRST AID 6. UNDERSTANDING DISEASES, AIDS EDUCATION*	**HEALTH EDUCATION** .5 unit required FIVE STRANDS PERSONAL HEALTH 1. LIFE SKILLS (DECISION MAKING, STRESS MGMT., WHOLE PERSON CONCEPT)* 2. HUMAN SEXUALITY: PSYCHOLOGICAL, SOCIAL, EMOTIONAL, AND PHYSICAL IMPLICATIONS* 3. POSITIVE AND NEGATIVE HEALTH LIFESTYLES* 4. HIGH RISK LIFESTYLES, DISEASE PREVENTION, AND AIDS EDUCATION* 5. STANDARD FIRST AID AND EMERGENCY SITUATIONS	**HEALTH EDUCATION** .5 unit required FIVE STRANDS CONSUMER HEALTH 1. LIFE SKILLS (DECISION MAKING, STRESS MGMT., WHOLE PERSON CONCEPT)* 2. HUMAN SEXUALITY: PSYCHOLOGICAL, SOCIAL, EMOTIONAL, AND PHYSICAL IMPLICATIONS* 3. POSITIVE AND NEGATIVE HEALTH LIFESTYLES* 4. HIGH RISK LIFESTYLES, DISEASE CONTROL, AND AIDS EDUCATION* 5. STANDARD FIRST AID AND EMERGENCY SITUATIONS
MOVEMENT/FITNESS FIVE STRANDS 1. BODY/SPACE AWARENESS AND MANAGEMENT 2. MOTOR FITNESS 3. PLAY SKILLS 4. MANIPULATIVE SKILLS 5. CREATIVE MOVEMENT (DANCE)	**MOVEMENT/FITNESS** SIX STRANDS 1. BODY/SPACE AWARENESS AND MANAGEMENT 2. MOTOR FITNESS 3. BASIC SPORTS SKILLS 4. GAMES AND SPORTS 5. STUNTS/TUMBLING 6. DANCE FORMS	**MOVEMENT/FITNESS** 1 unit required .5 unit BEGINNING FITNESS, TEAM SPORT SKILLS, AND RECREATIONAL AND DANCE ACTIVITIES .5 unit INTERMEDIATE FITNESS, TEAM SPORT SKILLS, AND RECREATIONAL AND DANCE ACTIVITIES	**MOVEMENT/FITNESS** 1.5 units required .5 unit PARTICIPATION SKILLS AND TECHNIQUES .5 unit FITNESS FOR LIFE .5 unit INDIVIDUALIZED LIFETIME ACTIVITIES .5 unit ADVANCED INDIVIDUALIZE LIFETIME ACTIVITIES SPECIALIZATION

BASIC CORE

CORE OPTIONS

*FULFILLS STATE LAW REQUIREMENTS

BEST COPY AVAILABLE

RESPONSIBLE HEALTHY LIFESTYLES

HEALTH EDUCATION LEVEL K

HEA LEVEL K

SIS NUMBER: 7000
SIS CODE: HL

COURSE DESCRIPTION (Levels K-3)

Health education actively involves students in coping with many of the problems encountered in life. These problems are identified through five strands: life skills, growing and developing, positive health practices, community health, and safety. Each student will be assessed regarding their knowledge and practice related to these five strands.

NOTE: To comply with state school law, teachers are encouraged to use the teaching resource files for the Alcohol and Drug Prevention Education Program in helping students achieve these standards.

CORE STANDARDS OF THE COURSE

STANDARD 7000-01	**The students will understand healthy life skills and the role of the family unit.**

OBJECTIVES

7000-0101. Recognize that individuals have personal characteristics that make them special.

7000-0102. Recognize different feelings.

7000-0103. Identify and demonstrate ways to get along with others.

7000-0104. Understand that the family is the basic social unit of life, and that everyone is a part of a family.

7000-0105. Identify persons in their lives with whom they can share feelings.

STANDARD 7000-02 **The students will learn about their own physical growth and development.**

OBJECTIVES

7000-0201. Recognize that individuals are different in looks, size, appearance, and ability.

7000-0202. Describe how their bodies change in height and weight as they get older.

7000-0203. Monitor personal growth.

STANDARD 7000-03 **The students will understand how a person's choices and habits lead to a happy, healthy life.**

OBJECTIVES

7000-0301. Understand that nutritious foods, including the eating of breakfast regularly, contributes to health and well-being.

7000-0302. Tell ways exercise helps keep people healthy.

7000-0303. Recognize that regular sleep and rest contribute to health and well-being.

7000-0304. Understand that cleanliness is important to health.

7000-0305. Learn to brush their teeth.

7000-0306. Know that drugs, alcohol, and tobacco can hurt their bodies.

STANDARD 7000-04 **The students will learn that the environment can make a difference in one's health.**

OBJECTIVE

7000-0401. Identify several reasons for keeping homes and schools orderly and clean.

STANDARD 7000-05 **The students will learn ways to be responsible for their own personal safety and for the safety of others at home and school.**

OBJECTIVES

7000-0501. Describe how to cross a street safely.

7000-0502. List several ways to be safe at home and school.

7000-0503. Identify people who help them maintain safety; e.g., firemen, policemen, crossing guards, teachers.

7000-0504. Explain the importance of being in charge of their own bodies.

7000-0505. Know their own phone number, address, guardian's name, and emergency number.

RESPONSIBLE HEALTHY LIFESTYLES

HEALTH EDUCATION LEVEL 1

HEA LEVEL 1

SIS NUMBER: 7010
SIS CODE: HL

CORE STANDARDS OF THE COURSE

STANDARD 7010-01 **The students will develop and practice healthy life skills including a positive self-image in their relationships with family and friends.**

OBJECTIVES

7010-0101. Identify and describe different feelings.

7010-0102. Recognize contributions of self and others; e.g., sharing, cooperation, etc.

7010-0103. Recognize the importance and consequences of family/school rules.

7010-0104. Describe how individuals might help one another.

7010-0105. Describe what they like about themselves.

STANDARD 7010-02 **The students will develop a knowledge and understanding of growth and development.**

OBJECTIVES

7010-0201. Identify personal growth and change; e.g., height, weight, size of head, length of arms, size of feet.

7010-0202. List similarities and differences of individuals with regard to size, shape, color of hair, color of eyes, etc.

STANDARD 7010-03 **The students will identify ways they can be responsible for their own health.**

OBJECTIVES

7010-0301. Identify the four food groups and name several foods within each group.

7010-0302. Explain reasons for eating the right kinds of food daily.

7010-0303. Explain the importance of daily exercise.

7010-0304. Tell why regular sleep and rest contribute to one's health and well-being.

7010-0305. Tell why cleanliness, grooming, posture, and body mechanics are important.

7010-0306. Have a general understanding of what may be found in the mouth.

7010-0307. Identify ways drugs/alcohol/tobacco may be harmful to the body.

STANDARD 7010-04 **The students will begin to understand the role of the community and the environment in health.**

OBJECTIVES

7010-0401. Describe ways that the environment affects health; e.g., water, air, and garbage.

7010-0402. Define the word pollution and describe various kinds.

7010-0403. Discuss the health services provided by schools and community; i.e., doctors, dentists, nurses, and pharmacists.

STANDARD 7010-05 **The students will begin to explain ways they can be responsible for their own personal safety and the safety of others.**

OBJECTIVES

7010-0501. Identify safety procedures in walking to and from school.

7010-0502. Describe what to do when approached by a stranger whether in person or on the telephone.

7010-0503. Discuss the role of police officers and other safety helpers.

7010-0504. Explain rules for safety in the home, on the playground, and at school.

7010-0505. Identify basic safety rules for riding a bicycle.

RESPONSIBLE HEALTHY LIFESTYLES

HEALTH EDUCATION LEVEL 2

HEA LEVEL 2

SIS NUMBER: 7020
SIS CODE: HL

CORE STANDARDS OF THE COURSE

STANDARD 7020-01 **The students will describe feelings and attitudes in their interactions with others.**

OBJECTIVES

7020-0101. Recognize why people have a variety of different feelings and that it is normal to express feelings.

7020-0102. Describe characteristics they like about themselves.

7020-0103. Describe ways families may be different.

7020-0104. Discuss reasons why families, schools, and communities have rules.

7020-0105. Tell how friends affect one another in positive or negative ways.

7020-0106. Identify school situations that result in strong feelings.

STANDARD 7020-02 **The students will describe how growth, development, and respect for life affects them.**

OBJECTIVES

7020-0201. Recognize that all living things come from other living things and show respect for them.

7020-0202. Chart and discuss different individual growth patterns.

STANDARD 7020-03 **The students will make positive choices that contribute to a healthy life.**

OBJECTIVES

7020-0301. Explain the difference between healthy and unhealthy snacks.

7020-0302. Tell why rest and proper exercise are needed for good health.

7020-0303. Describe the development and function of both primary and permanent teeth.

7020-0304. Explain proper care of the eyes, ears, and nose.

7020-0305. Explain why smoke is irritating to the body; e.g., burning leaves, campfire smoke, and cigarettes.

7020-0306. Classify healthy and unhealthy beverages.

STANDARD 7020-04	**The students will continue to understand the role of the community and the environment in health.**

OBJECTIVES

7020-0401. Explain the importance of following the advice of doctors, dentists, and nurses.

7020-0402. Describe the benefits of keeping homes, schools, and public buildings clean.

7020-0403. Describe how water, air, and land may be polluted, ways of keeping them clean, and the potential effects on health.

STANDARD 7020-05	**The students will show responsibility for their own safety and the safety of others.**

OBJECTIVES

7020-0501. Explain the value of the five senses in keeping safe.

7020-0502. Observe bicycle, pedestrian, and playground safety rules.

7020-0503. Understand the importance of participating in school emergency drills.

7020-0504. Discuss the importance of having a home evacuation plan.

7020-0505. Discuss the importance of keeping dangerous substances out of the reach of babies and younger children.

7020-0506. Identify basic water safety rules.

7020-0507. Describe ways to help police officers identify strangers who may approach students. Describe what to do when approached by a stranger either in person or on the telephone.

7020-0508. Understand that they are in charge of their own bodies and that others do not have a right to touch or fondle them.

7020-0509. Discuss emergency telephone numbers and procedures.

RESPONSIBLE HEALTHY LIFESTYLES

HEALTH EDUCATION LEVEL 3

HEA LEVEL 3

SIS NUMBER: 7030
SIS CODE: HL

CORE STANDARDS OF THE COURSE

STANDARD 7030-01	**The students will recognize how association with others affects self-esteem and personal behavior.**

OBJECTIVES

7030-0101. Tell why liking one's self is important for the development of a positive self-image and good mental health.

7030-0102. Discuss the importance of congenial relationships with other students and adults.

7030-0103. List ways personal habits and attitudes determine, in part, how we feel about ourselves and how others feel about us.

7030-0104. Identify basic steps in making responsible choices.

7030-0105. Discuss different ways people deal with feelings.

STANDARD 7030-02	**The students will evaluate growth and development patterns.**

OBJECTIVES

7030-0201. Understand that their bodies are made of many cells which divide and make them grow.

7030-0202. Indicate some of the growth characteristics they inherited from their father and mother.

7030-0203. Identify personal physical abilities and ways to improve them.

STANDARD 7030-03 **The students will accept responsibility for their own health and practices.**

OBJECTIVES

7030-0301. Describe how daily health practices make a difference in their appearance, health, and feelings of well-being.

7030-0302. Identify foods in the four food groups and explain the need for a balanced diet.

7030-0303. Define basic nutrients that come from the four basic food groups.

7030-0304. Discuss causes of plaque and cavities and the benefits of brushing, flossing, fluoride treatments, and dental checkups.

7030-0305. Discuss the health implications of using drugs, alcohol, and tobacco.

7030-0306. Classify different types of alcohol distinguishing between positive and negative uses.

STANDARD 7030-04 **The students will identify a variety of community services and environmental pollutants.**

OBJECTIVES

7030-0401. Discuss the many services provided by the community such as ambulances, poison control centers, paramedics, and rescue teams.

7030-0402. Discuss various types of pollution and their effect on health.

STANDARD 7030-05 **The students will show responsibility for their own safety and learn ways to respond in emergencies.**

OBJECTIVES

7030-0501. Explain how carelessness, hurrying too fast, anger, and upset feelings increase one's chance for having an accident.

7030-0502. Practice safe principles when riding a bicycle, when in an automobile, or on a school bus.

7030-0503. Identify and observe traffic signs and signals.

7030-0504. Recognize that getting adult help is one of the first things to do in an emergency.

7030-0505. Identify ways of being in charge of their own bodies and not allowing others to abuse them.

STANDARD 7030-06 **The students will develop an understanding of diseases and the immune system and how the disease AIDS compares with other diseases.**

OBJECTIVES

7030-0601. Discuss ways that the disease AIDS is similar to other diseases.

7030-0602. Describe how HIV is difficult to contract and usually does not affect children.

7030-0603. List ways that people cannot contract HIV.

7030-0604. Explain how the scientific community is working hard to find a cure for HIV/AIDS.

7030-0605. Describe strategies for HIV/AIDS prevention such as decision-making skills and refusal skills in responding to negative pressure from peers.

MOVEMENT AND FITNESS

RESPONSIBLE HEALTHY LIFESTYLES

MOVEMENT AND FITNESS LEVEL K

M&F LEVEL K

SIS NUMBER: 7500
SIS CODE: HL

COURSE DESCRIPTION (Levels K-3)

The core program in movement and fitness for the primary grades contains developmental activities which focus on body/space awareness, motor fitness, rhythmic awareness, play skills, object manipulation and control, and dance skills. Students will gain knowledge about, understanding of, and appreciation for movement and physical activities. They will learn communicative expression through movement--one of humanity's fundamental languages.

Education in and through dance should develop students' abilities in each of three roles: participant, observer/listener, and critic. These roles are distinct yet complimentary. When these skills are integrated, they provide the necessary and complete background for informed response to dance.

NOTE: Dance is contained in the Responsible Healthy Lifestyles Movement and Fitness component because it meets the goals and objectives of that component in reference to physical activity: body awareness, motor skills, rhythmic awareness, and physiological development. Dance also meets the goals and objectives of the Fine Arts Dance component in reference to the development of aesthetic perception, understanding of the creative process, kinesthetic awareness, and critical response.

CORE STANDARDS OF THE COURSE

STANDARD 7500-01	**The students will demonstrate personal space and body awareness.**

OBJECTIVES

7500-0101. Move in and maintain personal space, including starting and stopping on command.

7500-0102. Identify body parts used in a movement task.

7500-0103. Explore spatial concepts such as high-low, in-out, large-small, forward-backward, sideward, and turning.

7500-0104. Explore locomotor movement including walking, running, jumping, and hopping.

7500-0105. Move over a hoop, carpet square, rope, or line in various ways.

7500-0106. Invent or create different shapes the body can make (round, straight, curled, long, etc.).

7500-0107. Explore a variety of non-locomotor movements (bending, stretching, twisting, etc.).

7500-0108. Explore a variety of movements which involve maneuvering weight (pushing, pulling, lifting, etc.).

STANDARD 7500-02 The students will begin to develop health related and motor fitness.

OBJECTIVES

7500-0201. Run in different directions.

7500-0202. Jump up and down several times.

7500-0203. Swing the arms back and forth and make giant circles.

7500-0204. Pull the body from a lying position to a sitting position several times using some assistance such as a climbing rope, wand, or a partner.

7500-0205. With arms crossed on chest, hands on shoulders, perform several curl-ups with knees bent and feet on the floor.

7500-0206. Hop on one foot several times without losing balance.

7500-0207. Walk on a rope or line (10 feet or longer) maintaining balance.

7500-0208. Briskly walk or run around the multipurpose room and/or the playground.

7500-0209. Run as fast as possible for 20 yards.

STANDARD 7500-03 The students will follow simple rules, respect the personal space of others (safety), and be courteous.

OBJECTIVES

7500-0301. Participate in a variety of play activities requiring cooperation and playing by simple rules.

7500-0302. Contribute to safety by respecting the personal space of others.

7500-0303. Treat classmates and others courteously.

STANDARD 7500-04 **The students will begin to individually explore manipulative skills using medium to large-sized, soft objects.**

OBJECTIVES

7500-0401. Roll, throw, and catch objects such as yarn balls, fleece balls, sponge balls, etc.

7500-0402. Repeatedly kick and chase a soft object on the floor.

7500-0403. Explore a variety of movements using objects including bean bags, yarn balls, hula hoops, wands, ropes, different sized balls, etc.

7500-0404. Use carpet squares and mats in exploratory movements.

STANDARD 7500-05 **The students will express feelings by observing and participating in introductory rhythm and dance movements that include time, space, energy, and shape. (DANCE: Participant, Observer/Listener, and Critic)**

OBJECTIVES

7500-0501. Clap and move to the beat of various tempos (slow, medium, and fast).

7500-0502. Clap and move to simple rhythmic patterns based on such things as the syllables of names or other words.

7500-0503. Create curved, straight, bent, and twisted shapes with the body.

7500-0504. Express through motion such things as textures, senses, and emotions. (To stimulate exploration, the teacher might use words such as sad, happy, noisy, quiet, rough, smooth, etc.)

7500-0505. Perform traditional and creative singing games and dances or create simple group dances using combinations of locomotor steps. (Games and dances might include "Looby Loo," "London Bridge," "Did You Ever See A Lassie," etc.)

7500-0506. Express feelings generated after observing and participating in a dance.

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RESPONSIBLE HEALTHY LIFESTYLES

MOVEMENT AND FITNESS LEVEL 1

M&F LEVEL 1

SIS NUMBER: 7510
SIS CODE: HL

CORE STANDARDS OF THE COURSE

STANDARD 7510-01	**The students will demonstrate locomotor and non-locomotor movements with an understanding of personal and general space.**

OBJECTIVES

7510-0101. Move in general space without infringing on the personal space of others.

7510-0102. Identify body parts and surfaces in a movement task.

7510-0103. Move in space changing to various levels (low, medium, high) on command.

7510-0104. Explore and experience locomotor movements (walking, running, jumping, hopping, leaping, skipping, galloping, and sliding) at (a) slow and fast speeds; (b) in different directions.

7510-0105. Bend, stretch, and twist different parts of the body (legs, arms, trunk, etc.) while standing, sitting, and lying down.

7510-0106. Explore a variety of movements involving maneuvering weight (pushing, pulling, lifting, etc.) with an object.

7510-0107. Using the body, make the shape of a letter or number from zero to nine.

STANDARD 7510-02	**The students will continue to develop health related and motor fitness involving jumping, lifting, walking, balancing, running, swinging, hopping, etc.**

OBJECTIVES

7510-0201. Jump forward, backward, and sideward over a line or rope on the floor several times.

7510-0202. Swing one arm at a time in different directions and at different levels.

7510-0203. Combine the movement of two arms in the same direction and in opposite directions.

7510-0204. Pull the body from a lying position to a standing position using some assistance such as a climbing rope, wand, or a partner.

7510-0205. Support body weight on hands from a sitting position for several seconds.

7510-0206. With arms crossed on chest, hands on shoulders, perform several curl-ups with knees bent and feet on floor.

7510-0207. Sustain a variety of locomotor movements going forward, backward, and sideward.

7510-0208. Hop on one foot several times without losing balance, repeat on other foot.

7510-0209. Walk the length of a low balance beam without falling off.

7510-0210. Jump from a two-foot height and land on a mat, grass, or sand without falling down.

7510-0211. Standing on both feet, with eyes closed, balance for 10 seconds.

7510-0212. Run in place for one minute.

7510-0213. Walk 600 yards at a brisk pace.

7510-0214. Run as fast as possible for 30 yards.

STANDARD 7510-03 **The students will follow simple rules and directions displaying respect for personal and general space.**

OBJECTIVES

7510-0301. Participate in a variety of play activities requiring cooperation.

7510-0302. Listen to and follow simple directions.

7510-0303. Play by the rules in games and activities of low organization.

7510-0304. Contribute to safety by respecting the personal space of others.

STANDARD 7510-04 **The students will continue individual exploration of manipulative skills using a variety of objects.**

OBJECTIVES

7510-0401. Roll, bounce, throw, catch, strike, and kick objects such as yarn, fleece, sponge, and playground balls.

7510-0402. Explore a variety of movements using objects such as bean bags, yarn balls, hula hoops, wands, ropes, and different sized balls.

7510-0403. Use carpet squares, mats, boxes, and benches in exploratory movements.

STANDARD 7510-05 **The students will continue to express feelings by observing and participating in introductory rhythm and dance movements that include time, space, energy, and shape. (DANCE: Participant, Observer/Listener, Critic)**

OBJECTIVES

7510-0501. Clap and move, accenting the first beat of every measure in 4/4 time.

7510-0502. Clap and move to simple rhythmic patterns based on such things as phrases or whole sentences.

7510-0503. Create symmetrical (in which the two sides look alike) and asymmetrical (in which the two sides do not look alike) shapes with the body.

7510-0504. Through movement, explore over/under, above/below, near/far, in front/behind, inside/outside, and around/through.

7510-0505. Move through space in various directions; e.g., walking, running, leaping, hopping, jumping, skipping, galloping, and sliding.

7510-0506. Improvise a sequence of energy (motion) changes; i.e., moving from lyrical (floating, gliding) to percussive (sharp, quick).

7510-0507. Perform traditional and creative singing games and dances or create simple group dances using basic locomotor steps. (Games and dances might include "Bear Growl," "Statue Games," "Jolly is the Miller," "Muffin Man," etc.)

7510-0508. Express the feelings generated after observing a dance (live, film, or video); i.e., mood, patterns, and movement.

RESPONSIBLE HEALTHY LIFESTYLES

MOVEMENT AND FITNESS LEVEL 2

M & F LEVEL 2

SIS NUMBER: 7520
SIS CODE: HL

CORE STANDARDS OF THE COURSE

STANDARD 7520-01 **The students will demonstrate space awareness (personal and general), relationships (with body parts, people, places, and things), and exploratory movement.**

OBJECTIVES

7520-0101. Move in general space changing directions and pathways.

7520-0102. Perform movement activities at different levels with a partner.

7520-0103. Combine various locomotor steps in a movement pattern changing speed and levels.

7520-0104. Place three parts of the body inside a space (hoop, carpet square, etc.) and two parts of the body outside.

7520-0105. Mirror the movements of a partner while changing body shapes.

7520-0106. Bend and stretch different parts of the body with a partner using varying speeds; e.g., stretch arm up slowly, then bend it back to original position slowly.

7520-0107. Explore a variety of movements involving maneuvering weight (pushing, pulling, lifting, etc.) with a partner.

STANDARD 7520-02 **The students will continue to develop health related and motor fitness including strength, agility, balance, flexibility, speed/reaction time, and endurance.**

OBJECTIVES

7520-0201. Demonstrate **strength** by:

a. sustaining an arm hang, using an overhand grip, from an overhead ladder or chinning bar for 8 seconds, and

b. doing a standing long jump equal to one's height.

7520-0202. Demonstrate **agility** by:

a. jumping in, out, over, and around hoops, mats, or other obstacles several times in a row, and

b. jumping a rope or hoop turned by self 10 times.

7520-0203. Demonstrate **balance** by:

a. walking the length of a balance beam, turning around, and walking back, and

b. balancing an object on different parts of the body while performing different locomotor movements.

7520-0204. Demonstrate **flexibility** by:

a. grasping the fingers in the middle of the upper back for 5 seconds with one arm over the shoulder and the other behind the back, and

b. holding a stick or wand with both hands (palms down) and stepping through and back 3 times without letting go.

7520-0205. Demonstrate **speed/reaction time** by:

a. running as fast as possible for 40 yards, and

b. changing directions upon a visual or verbal signal while doing a variety of locomotor movements.

7520-0206. Demonstrate **endurance** by:

a. jogging 600 yards, and

b. jogging an accumulated total of 5 miles during one month. **(NOTE: This might be done by jogging a minimum of a quarter of a mile a day, 440 yards.)**

STANDARD 7520-03	**The students will follow simple rules and directions displaying respect for personal and general space.**

OBJECTIVES

7520-0301. Participate in a variety of play activities requiring cooperation.

7520-0302. Listen to and follow directions in a positive manner.

7520-0303. Participate safely in games and activities of low organization.

7520-0304. Safely use equipment in activities.

STANDARD 7520-04 The students will improve their manipulative skills using a variety of objects and parts of the body.

OBJECTIVES

7520-0401. Throw, catch, strike, and kick various sized balls or other objects.

7520-0402. In pairs explore a variety of movements using objects including bean bags, yarn balls, hula hoops, wands, ropes, and different sized balls.

7520-0403. Recognize that manipulative skills change when different sized objects are used.

7520-0404. Use the following equipment: mats, boxes, benches, balance beams, risers, and climbing ropes in exploratory movements.

STANDARD 7520-05 The students will express feelings by observing a dance performance and combine introductory rhythm and dance movements that include time, space, energy, and shape. (DANCE: Participant, Observer/Listener, Critic)

OBJECTIVES

7520-0501. Express beat and rhythm patterns by clapping and moving body parts; i.e., accenting the first beat of a metric phrase, moving to a patterned verse.

7520-0502. Explore symmetrical and asymmetrical shapes with the body, alternating from one to the other, and move through space changing the level of the body.

7520-0503. Improvise a sequence of energy changes; i.e., moving from lyrical (floating, gliding) to percussive (sharp, quick).

7520-0504. Create new and unusual solutions to walking from here to there, changing direction, speed, size, sound, level, shape, or rhythm.

7520-0505. Perform traditional and creative singing games and dances such as "Round and Round The Village," "Bingo," "Here We Go Round the Mountain."

7520-0506. Express feelings generated by observing a dance performance -- describing the impressions it creates and discussing what the choreographer wants the audience to think or feel.

RESPONSIBLE HEALTHY LIFESTYLES

MOVEMENT AND FITNESS LEVEL 3

M&F LEVEL 3

SIS NUMBER: 7530
SIS CODE: HL

CORE STANDARDS OF THE COURSE

STANDARD 7530-01	**The students will demonstrate space awareness (personal and general), and relationships (with body parts, people, places, and things) with an increased level of difficulty in exploratory movement.**

OBJECTIVES

7530-0101. Move in general space with a partner changing directions and pathways.

7530-0102. Support weight on matching body parts (feet), similar body parts (arms and legs), and different body parts (feet and seat).

7530-0103. Participate in groups of two or more students by placing body parts at different levels such as feet, knees, elbows, and head.

7530-0104. Place five parts of the body inside a space (hoop, carpet square, etc.) and one part of the body outside.

7530-0105. With a partner, explore space words such as over, under, and around while making body shapes. (Example: one partner makes a shape while the other partner tries to cross over, under, or around.)

7530-0106. Combine bending and stretching with other locomotor or non-locomotor movements (bend, stretch, swing, jump).

7530-0107. Explore a variety of movements involving maneuvering weight (pushing, pulling, lifting) with a group.

STANDARD 7530-02	**The students will continue to develop health related and motor fitness including strength, agility, balance, flexibility, speed/reaction time, and endurance.**

OBJECTIVES

7530-0201. Demonstrate **strength** by:

- a. hand walking an overhead ladder, and
- b. jumping and reaching 12 inches beyond their standing reach.

7530-0202. Demonstrate **agility** by:

- a. running in (front door) and jumping a turning rope 10 times and running out (back door), and
- b. moving through a simple obstacle or challenge course.

7530-0203. Demonstrate **balance** by:

- a. hopping twice on one foot and then the other, staying within a 2-foot circle for 30 seconds, and
- b. performing a stork stand, with the eyes open for 10 seconds, on each foot.

7530-0204. Demonstrate **flexibility** by:

- a. bending forward and touching the toes while keeping the legs slightly bent, and
- b. interlocking fingers, stepping through the hands one foot at a time forward and backward.

7530-0205. Demonstrate **speed/reaction** time by:

- a. running as fast as possible for 50 yards, and
- b. moving through a simple obstacle or challenge course.

7530-0206. Demonstrate **endurance** by:

- a. jogging or running 600 yards, and
- b. jogging an accumulated total of 10 miles during two months. **(NOTE: This might be done by jogging a minimum of a quarter of a mile a day, 440 yards.)**

STANDARD 7530-03	**The students will follow rules and directions, participate safely, and display respect for personal and general space.**

OBJECTIVES

7530-0301.	Display positive attitudes toward play activities by listening to, following directions, and taking turns.
7530-0302.	Participate with vigor (enthusiasm) in games of low organization.
7530-0303.	Recognize good safety practices and avoid behavior that may lead to injury or disruption of activities.

STANDARD 7530-04	**The students will expand their manipulative skills using a variety of objects.**

OBJECTIVES

7530-0401.	Invent several different ways to throw an object into the air and catch it.
7530-0402.	Kick stationary and moving objects.
7530-0403.	Strike a ball or similar object with the hand or a short-handled bat or racket.
7530-0404.	In groups of four, explore a variety of movements using different objects such as balls, sticks, bean bags, yarn balls, and hoops.
7530-0405.	In exploratory movement, use some of the following: mats, boxes, benches, risers, scooters, balance beams, ropes, balance boards, ladders, and parachutes.

STANDARD 7530-05	**The students will create simple dances and discuss reasons for dance; combine introductory rhythm and dance movements that include time, space, energy, and shape. (DANCE: Participant, Observer/Listener, Critic)**

OBJECTIVES

7530-0501.	Clap and move in 6/8 time, accenting the first beat of every measure, changing the body part, the direction, the level, or the energy.
7530-0502.	Move appropriately to a piece of 4/4 music or to a steady beat; e.g., slowly to half notes, moderately to quarter notes, and quickly to eighth notes.

7530-0503. Discuss and express through movement the rhythms found in:

a. nature; e.g., wind, sea, and trees;

b. the body; e.g., breath, pulse, sneeze, and tickle;

c. mechanical and non-mechanical objects; e.g., ball, feather, and eggbeater.

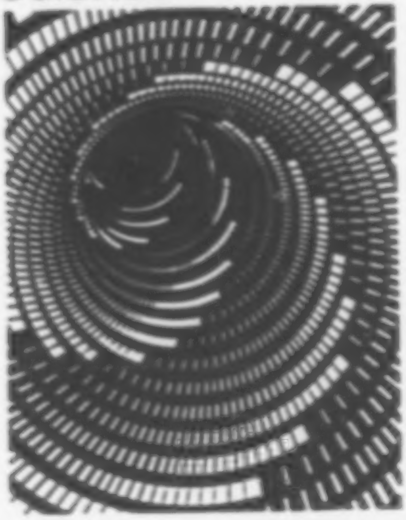
7530-0504. Create a series of shapes on different levels (low, medium, and high) and design transitions between them; e.g., slow-motion and sustained, sudden or percussive.

7530-0505. Improvise a sequence of energy changes such as percussive, sustained, lyrical, collapsing, and swinging and relate these energy changes to another curriculum area such as science.

7530-0506. Perform traditional and creative singing games or create a simple group dance based on a theme. The dance should include a beginning, middle, and end. (Games and dances might include: "Skip To My Lou," "Digga Doe," "Jim Along Josie," etc.)

7530-0507. Discuss why people dance and how this art form is used as a kind of nonverbal communication.

Science



SCIENCE

The need to impart to all students some familiarity with modern science has come to assume major importance beyond the traditional education. Even if their future goals and occupations should be far removed from scientific fields, all of today's students will have to live in a world increasingly dominated by the rapid proliferation of its technological consequences. Furthermore, they will often be called upon to make decisions involving scientific considerations which could significantly affect the quality of life in our society.

Science should help students to live meaningfully and responsibly in a changing world, to perceive that there is order in the universe--that cause and effect relationships are present everywhere, to learn to search for answers and to question the accuracy and validity of those answers, to understand the importance of living their lives in harmony with all of nature's other creatures, and to relate the concepts of science to the practical application in future employment choices and careers.

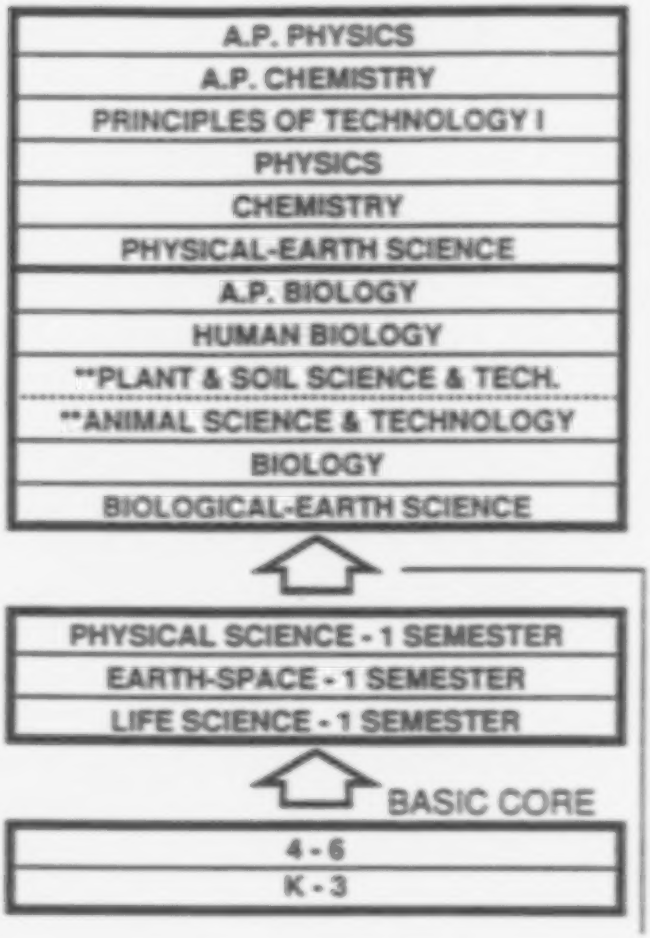
The science core may be taught in a variety of ways and the scope and sequence within a level or course is not "sacred." The approach has been to give students instruction in the life, earth-space, and physical sciences in a spiral format in grades K-6; in grades 7-8 these areas are covered in semester courses; and in grades 9-12 the requirement is for one biological science course and one physical science course from a selected group of core options.

Critical to the science instruction given Utah students is the need to involve **active** science inquiry. The processes of science--observing, classifying, inferring, predicting, measuring, communicating, using space/time relations, defining operationally, formulating hypotheses, experimenting, recognizing variables, interpreting data, formulating models--are as essential to student learning as the content and concepts. The laboratory and outdoor classroom are excellent settings for instructing these process skills.

To teach science effectively, it must be taught **safely**. Instruction and practice in safe handling of materials and equipment is a paramount responsibility of the science teacher. Safety is preventing an accident which might result in injury, not merely dealing with the accident after it has occurred.

The science core focuses on the "**what**" not the "how" or "when." Teachers should note that the core does not constitute the whole content of any grade level or course and represents a minimal requirement. The teacher develops the sequence for instruction and determines methodology, subject matter, resources, references, projects, and media for students.

SCIENCE COURSE CHART



		CORE OPTIONS	SIS CODE:
9-12		A.P. PHYSICS	SP
		A.P. CHEMISTRY	SP
		PRINCIPLES OF TECHNOLOGY I	SP
		PHYSICS	SP
		CHEMISTRY	SP
		PHYSICAL-EARTH SCIENCE	SP
	* 2 UNITS REQUIRED (1 IN BIOLOGICAL AND 1 IN PHYSICAL SCIENCE) FROM THESE CORE OPTIONS	A.P. BIOLOGY	SB
		HUMAN BIOLOGY	SB
		**PLANT & SOIL SCIENCE & TECH.	SB
		**ANIMAL SCIENCE & TECHNOLOGY	SB
		BIOLOGY	SB
		BIOLOGICAL-EARTH SCIENCE	SB
7-8	THESE 1.5 UNITS REQUIRED IN THE 7-8 BASIC CORE	PHYSICAL SCIENCE - 1 SEMESTER	SC
		EARTH-SPACE - 1 SEMESTER	SC
		LIFE SCIENCE - 1 SEMESTER	SC
K-6	MASTERY OF THE 4-6 BASIC CORE REQUIRED	4 - 6	SI
		K - 3	SI

*In the event that a student's SEP indicates the intent to specialize in an area of science in which training in both areas -- biological and physical -- would not be essential, the district may approve on an individual basis, two biological or two physical science courses to fulfill the high school science core requirements.

**Successful completion of BOTH "Animal Science and Technology" and "Plant and Soil Science and Technology" is required to satisfy the core requirement in biological science. Two units of credit will be granted, one in biological science and one in vocational education.

SCIENCE LEVEL K

SCI LEVEL K

SIS NUMBER: 3000
SIS CODE: SI

COURSE DESCRIPTION (Levels K-3)

The students' learning experiences in Levels K-3 are derived from their interests and investigations of the environment. Real or contrived, the environment must be one that interests them and one in which they are active participants. Learning experiences are equally drawn from the areas of life science, physical science, and earth science. Students, using their five senses, investigate some observable and inferential characteristics and phenomena of plants and animals, matter and energy, earth and space, natural resources, ecology, weather, and seasons. The students' learning activities in each of the levels should be centered around concrete experiences. By the end of Level 3, most of the students should be able to demonstrate the ability to use the basic process skills of observing, classifying, inferring, recognizing and controlling variables, predicting and interpreting data, and experimenting and communicating.

CORE STANDARDS OF THE COURSE

STANDARD 3000-01	**The students will use the five senses to gather and compare information about their natural environment.**

OBJECTIVES

3000-0101. Determine the shape, size, and texture of a common object; e.g., ruler--rectangle, nesting blocks--large and small, sandpaper--rough, cotton--soft.

3000-0102. Compare the color, shape, size, texture, and location of common objects; e.g., tooth--white, peak of house--triangle, tree--large, leaf--smooth, mountain--far.

3000-0103. Identify and distinguish some common sweet, sour, salty, and bitter foods; e.g., marshmallow--sweet, lemon--sour, pretzel--salty, bitter chocolate or whole cloves--bitter.

3000-0104. Recognize some common scents and odors; e.g., pine needles, perfume, cinnamon stick, onion.

3000-0105. Students will identify sounds and sources of sounds; e.g., telephone, whistle, vacuum.

3000-0106. Infer which sense or senses are used to make an observation; e.g., fingers--touch, eyes--sight, nose--smell, tongue--taste, ears--hear.

STANDARD 3000-02 **The students will categorize animals according to similarities and differences.**

OBJECTIVES

3000-0201. Conclude that there are many different kinds of animals.

3000-0202. Compare how animals differ in size, shape, and color.

3000-0203. Group animals as domestic and wild animals.

3000-0204. Recognize different body coverings of animals; e.g., fur, shell, feathers, hair.

3000-0205. Show how animals move; e.g., snails--crawl, sea gulls--fly, kangaroos--jump.

3000-0206. Distinguish likenesses and differences between young animals and their parents.

STANDARD 3000-03 **The students will observe and describe variations in plants.**

OBJECTIVES

3000-0301. Recognize different kinds of plants; e.g., grass, bushes, flowers, trees.

3000-0302. Observe that different plants grow at different rates.

3000-0303. Show that some plants have seeds and discover that seeds differ in size, shape, and color.

3000-0304. Discover that a seed is a living thing and can grow into a plant.

3000-0305. Demonstrate that plants have many parts; some parts grow above the ground and some underground.

STANDARD 3000-04 **The students will use magnets and identify objects that are affected by magnets.**

OBJECTIVES

3000-0401. Use magnets and describe what they look and feel like.

3000-0402. Find objects that are attracted by a magnet and objects that are not.

STANDARD 3000-05 **The students will observe and describe some basic components of weather.**

OBJECTIVES

3000-0501. Compare the characteristics of sunny days, rainy days, cloudy days, windy days, snowy days, and foggy days, or a combination of these.

3000-0502. Recognize that clouds affect the weather and have different shapes.

3000-0503. Discover that the sun warms the earth, air, and objects and helps determine the weather.

3000-0504. Demonstrate that wind is moving air.

STANDARD 3000-06 **The students will describe and compare seasonal changes in plants, animals, and people.**

OBJECTIVES

3000-0601. Identify some characteristics of each season.

3000-0602. Investigate how trees and other plants look during the different seasons.

3000-0603. Compare and contrast the habits and activities of animals and people during the different seasons.

SCIENCE LEVEL I

SCI LEVEL I

SIS NUMBER: 3010
SIS CODE: SI

CORE STANDARDS OF THE COURSE

STANDARD 3010-01 **The students will use their five senses to perceive and organize objects and events.**

OBJECTIVES

3010-0101. Classify (group) objects by size, color, and shape.

3010-0102. Put in order a collection of at least three like objects according to size or weight; e.g., shortest to tallest, lightest to heaviest.

3010-0103. Identify the sources of different sounds, odors, tastes, and light.

3010-0104. Compare and describe different kinds of texture.

3010-0105. Identify the eyes, ears, nose, tongue, and skin as parts of the body that can detect particular sensations.

STANDARD 3010-02 **The students will group animals according to their physical characteristics and identify the basic needs of animals.**

OBJECTIVES

3010-0201. Investigate a variety of animals and discuss some likenesses and differences among them.

3010-0202. Group animals as those that hatch and those that are born alive.

3010-0203. Identify and name some common animals; describe the places where they live and why they live there.

3010-0204. Infer that all animals need food, air, water, and shelter.

3010-0205. Recognize that animals need proper care and handling.

STANDARD 3010-03	**The students will describe and group plants and seeds; categorize plant parts; identify plants as living organisms; and experiment with seeds.**

OBJECTIVES

3010-0301. Describe similarities and differences in plants and seeds.

3010-0302. Discover that seeds and plants differ in size, color, shape, texture, and outer covering.

3010-0303. Identify seeds, leaves, roots, stems, and flowers as being common to most plants.

3010-0304. Find out what is inside a seed; e.g., peanut or bean shows example of leaf and root; and determine conditions needed for seeds to sprout; e.g., warmth, moisture, air.

3010-0305. Investigate variations in the ways that plants produce and disperse seeds.

3010-0306. Recognize that seeds develop into the same kind of plant that the seed came from and both are living organisms.

STANDARD 3010-04	**The students will compare the three states of matter and cite examples of matter changing from one state to another.**

OBJECTIVES

3010-0401. Identify materials in the environment as solids, liquids, or gases.

3010-0402. Describe similarities and differences among the three states of matter.

3010-0403. Observe that the state of matter can be changed; e.g., water to ice, shortening to oil, clouds to rain, sugar to syrup, candle to wax.

3010-0404. Investigate what happens over several hours to water in a sponge, towel, or shallow pan.

STANDARD 3010-05	**The students will identify characteristics of water and its uses.**

OBJECTIVES

3010-0501. Investigate water as a solid (ice), liquid, and gas (water vapor).

3010-0502. Demonstrate that some common materials dissolve in water and some do not.

3010-0503. Discover some common objects that float in water and some that sink in water.

3010-0504. Describe ways that people have fun with water.

3010-0505. Discuss that water is a limited resource and should not be wasted.

STANDARD 3010-06 **The students will identify characteristics of air and its uses.**

OBJECTIVES

3010-0601. Observe air directly with the sense of touch and indirectly with the senses of sight, hearing, and smell.

3010-0602. Conclude that air is all around them, has weight, and takes up space; e.g., inflated and deflated ball or balloon.

3010-0603. Discover that air can make objects move.

3010-0604. Identify ways that people use air and the problems of air pollution.

3010-0605. Infer that all plants and animals need air to stay alive.

STANDARD 3010-07 **The students will identify sources of energy and describe ways to conserve energy.**

OBJECTIVES

3010-0701. Observe the wind as a source of energy; e.g., sailboats, windmills.

3010-0702. Describe ways that coal and wood are sources of energy; e.g., fireplaces, furnaces, campfires.

3010-0703. Recognize gasoline as a source of energy; e.g., cars, trucks, lawnmowers.

3010-0704. Discuss food as a source of energy; e.g., hamburgers for people, hay for cows.

3010-0705. Identify the sun and water as sources of energy; e.g., heat, light, electricity.

3010-0706. Describe ways to conserve energy; e.g., turning off lights, televisions, and radios not in use; closing doors in heated and air conditioned buildings; recycling aluminum cans.

STANDARD 3010-08 **The students will describe and record weather related information and suggest appropriate activities for different kinds of weather.**

OBJECTIVES

3010-0801. Describe different kinds of weather.

3010-0802. Observe, describe, and record the weather on a given day(s).

3010-0803. Distinguish between two very different temperatures with and without the aid of a thermometer.

3010-0804. Describe appropriate activities and clothing for different kinds of weather.

STANDARD 3010-09 **The students will identify time categories, name and sequence the four seasons, and describe seasonal changes.**

OBJECTIVES

3010-0901. Classify what they might do according to time categories such as morning, noon, night, day of the week, or season of the year.

3010-0902. Name each season and identify its typical characteristics.

3010-0903. Place in proper order the seasons of the year.

3010-0904. Observe and describe changes in the local seasons.

3010-0905. Conclude that seasons vary in temperature, length of day, and effect on plant and animal life.

SCIENCE LEVEL 2

SCI LEVEL 2

SIS NUMBER: 3020
SIS CODE: SI

CORE STANDARDS OF THE COURSE

STANDARD 3020-01 **The students will discover that animals differ in different stages of their lives.**

OBJECTIVES

3020-0101. Describe some different kinds of animals and their young found in the students' environment.

3020-0102. Identify some baby animals and speculate as to what changes will take place as these animals grow.

3020-0103. Infer how animals care for their young.

3020-0104. Conclude that life is a cycle which includes birth, growth, and death; and that animals are capable of different activities at different stages in their life cycle

STANDARD 3020-02 **The students will investigate cause-effect relationships between various light sources and shadows.**

OBJECTIVES

3020-0201. Identify light sources; e.g., sun, light bulbs, fire, stars.

3020-0202. Show that when an object blocks the path of light, a shadow of the object is formed.

3020-0203. Change the size and shape of a shadow by moving the object that casts it.

3020-0204. Demonstrate the sun's position using an object and its shadow.

STANDARD 3020-03 **The students will demonstrate principles of sound production and transmission.**

OBJECTIVES

3020-0301. Demonstrate that sound is produced when materials vibrate; e.g., rubber band, guitar string, tuning fork, drum, tambourine.

3020-0302. Demonstrate that the faster an object vibrates, the higher the pitch of the sound produced.

3020-0303. Observe that sound requires something to carry it from one place to another; e.g., simple string-cup phone, and describe their observations.

STANDARD 3020-04 **The students will demonstrate and describe some properties and uses of magnets.**

OBJECTIVES

3020-0401. Discover, by experimenting, that magnets vary in strength and which objects are attracted to magnets.

3020-0402. Locate the north and south poles on a magnet and demonstrate that the magnetic field is strongest at the poles.

3020-0403. Identify some materials through which magnetism will pass.

3020-0404. Create a "picture" of a magnetic field; e.g., place a piece of paper over a magnet and sprinkle iron filings on the paper.

3020-0405. List some uses of magnets.

STANDARD 3020-05 **The students will investigate and measure some observable properties of heat.**

OBJECTIVES

3020-0501. Demonstrate that objects in the sunlight are warmer than the same objects placed in the shade.

3020-0502. Show that heat causes some things to melt.

3020-0503. Explain that the red line goes up or down because the liquid in the thermometer expands or contracts.

3020-0504. Determine the temperature of objects such as liquids, air, and solids (ice) by using a thermometer.

STANDARD 3020-06 **The students will classify rocks on the basis of observable characteristics and identify where rocks are used in their community.**

OBJECTIVES

3020-0601. Collect rocks and discover that they are found in many different places.

3020-0602. Identify rocks by observable characteristics; e.g., hard-soft, shiny-dull, smooth-rough, single color-multicolored.

3020-0603. Locate places in the community where rocks are used and describe how and where they are used.

3020-0604. Select rocks that have crystals in them and describe the crystals.

STANDARD 3020-07 **The students will identify properties, sources, and uses of water and label the basic stages of the water cycle.**

OBJECTIVES

3020-0701. Describe the importance of water in their daily lives.

3020-0702. Demonstrate that water can change from one state to another.

3020-0703. Discover that water evaporates and condenses.

3020-0704. Explain how water comes from the clouds in the form of rain, snow, sleet, and hail.

3020-0705. Label and discuss the basic stages of the water cycle.

3020-0706. Classify materials into two groups: those that absorb water and those that do not.

3020-0707. Evaluate the importance of reservoirs and irrigation practices.

STANDARD **3020-08**	**The students will identify and describe the moon as a natural satellite, and compare natural satellites to man-made satellites.**

OBJECTIVES

3020-0801. Identify and describe the moon as a natural satellite of the earth.

3020-0802. Use a model to show that the moon is visible because it reflects light from the sun.

3020-0803. Conclude that it takes 24 hours for the earth to make one complete turn and four weeks for the moon to move around the earth once.

3020-0804. Infer why the moon looks bigger than the sun and the stars.

3020-0805. Compare man-made and natural satellites; e.g., launched, size, purpose.

SCIENCE LEVEL 3

SCI LEVEL 3

SIS NUMBER: 3030
SIS CODE: SI

CORE STANDARDS OF THE COURSE

STANDARD 3030-01	**The students will compare different animal habitats and describe how animals behave in different ways to meet their life needs.**

OBJECTIVES

3030-0101. Compare an artificial habitat in a zoo, farm, home, or school with the natural habitat of an animal.

3030-0102. Compare several kinds of animals to see how their methods of gathering food and finding shelter are different.

3030-0103. Explain how environmental factors (color, shading, cover) help an animal protect itself.

3030-0104. Recognize that some animals seem to have built-in "clocks" that tell them when to do certain things such as hibernate, migrate, or spawn. Investigate an animal that does each of these.

3030-0105. Differentiate between animals that are active during the day and those that are active during the night and discuss reasons for the nighttime activity of some animals.

3030-0106. Discover how plants and animals in an ecosystem interact with each other.

STANDARD 3030-02	**The students will grow and group plants and explain the effects of the environment on plants.**

OBJECTIVES

3030-0201. Observe and record on a graph the growth of a plant.

3030-0202. Compare and contrast the characteristics of the major plant groups; e.g., those with stems and those without.

3030-0203. Classify plants into sets and subsets of similar characteristics using leaves or flowers; e.g., group flowers by size and then color, or leaves by size and then shape.

3030-0204. Experiment with different parts of mature plants; e.g., roots, stems, leaves, flowers to determine which parts will grow into new plants.

3030-0205. Explain the effects of the environmental elements on plants; e.g., seasons, pollution, water, and the time of day.

3030-0206. Distinguish between evergreen and deciduous plants.

STANDARD 3030-03 **The students will identify natural resources, how they are used, and how to conserve them.**

OBJECTIVES

3030-0301. Identify some commonly used natural resources; e.g., soil, water, wind, oil, trees.

3030-0302. Describe and demonstrate ways these natural resources are used.

3030-0303. Determine ways to conserve these natural resources.

STANDARD 3030-04 **The students will illustrate how matter can be categorized, weighed, and changed.**

OBJECTIVES

3030-0401. Identify matter as anything that occupies space and has weight.

3030-0402. Identify things that are not matter because they do not occupy space or have weight; e.g., heat, sound, light, electricity.

3030-0403. Observe that matter can be either a solid, a liquid, or a gas and can change from one state to another. Record observations.

STANDARD 3030-05 **The students will demonstrate how static electricity can be produced, investigate its properties, and describe lightning as an example of static electricity.**

OBJECTIVES

3030-0501. Demonstrate that static electricity can often be produced by rubbing two different kinds of material together.

3030-0502. Identify materials that are charged with static electricity by observing that they attract things; e.g., nylon and cotton threads, dry hair, small bits of paper.

3030-0503. Demonstrate that some charged objects attract each other and other charged objects repel each other.

3030-0504. Explain what causes lightning and thunder; discuss some safe and unsafe places to be when there is lightning.

STANDARD 3030-06 **The students will identify landforms and determine the relationship between the earth's surface features and the forces that are constantly changing them.**

OBJECTIVES

3030-0601. Discover that the earth's surface has a variety of landforms; e.g., mountains, deserts, plains, lakes, rivers, oceans.

3030-0602. Compare the place where they live to a pictured area which may show mountains, deserts, plains, lakes, rivers, etc.

3030-0603. Identify factors that cause changes in landforms; e.g., erosion, weathering, volcanoes.

STANDARD 3030-07 **The students will demonstrate the earth's motions in space and describe events that occur regularly because of these motions.**

OBJECTIVES

3030-0701. Use a globe as a representation of the earth and locate the north and south poles.

3030-0702. Demonstrate how the earth and everything on it rotates and also revolves around the sun.

3030-0703. Use the measurements of time; e.g., hour, day, year and relate them to the earth's motion.

3030-0704. Discuss how the movements of the earth and moon cause the moon to appear in different shapes.

STANDARD 3030-08 **The students will be able to identify and describe simple machines, and give an example of each machine's use.**

OBJECTIVES

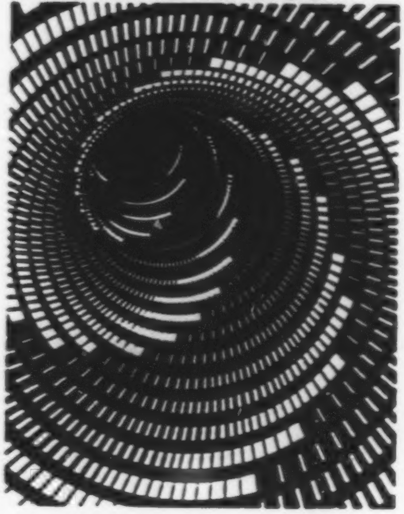
3030-0801. Identify a simple machine as a machine with few or no moving parts.

3030-0802. Describe a lever and demonstrate its uses; e.g., hammer, seesaw, can opener.

3030-0803. Describe an inclined plane and demonstrate its uses; e.g., wedge, ax, ramp, screw.

3030-0804. Describe and demonstrate a wheel and axle; e.g., pulley, egg beater, roller skates, bicycle.

Social Studies



SOCIAL STUDIES

People are social beings who need wholesome human relationships and productive problem-solving skills. Social studies helps to fulfill these needs and is the major area in the school's general education program which is concerned with the preparation of students in becoming responsible, rational, participating citizens in a pluralistic, democratic society and in a world which is becoming increasingly interdependent.

Citizenship/character education is a particular focus of social studies and is also a subject which fosters an interdisciplinary approach in the curriculum. Development of the means whereby the essential processes, values, and capabilities undergirding our society can be perpetuated and improved is one of the major reasons for the existence of schools.

To the social sciences (history, geography, sociology, psychology, anthropology, economics, and political science) new fields of study have been added which include studies in law-related, values, career, international, multicultural, and free enterprise education. All of these subjects are integrated at each level/course in the core curriculum.

A primary goal for all students and teachers is increasing their ability to be more productive, which contributes to acquiring and maintaining a higher standard of living.

The social studies core curriculum at each level/course begins with the identification of higher level thinking standards and objectives; i.e., listening, speaking, reading, writing, thinking, and citizenship/character skills, which can be incorporated in teaching strategies with all other standards and objectives.

One of the most commonly accepted principles of learning that has been incorporated in the social studies core curriculum is the importance of integration--of emphasizing the understanding of concepts and processes over the mere acquisition of isolated facts.

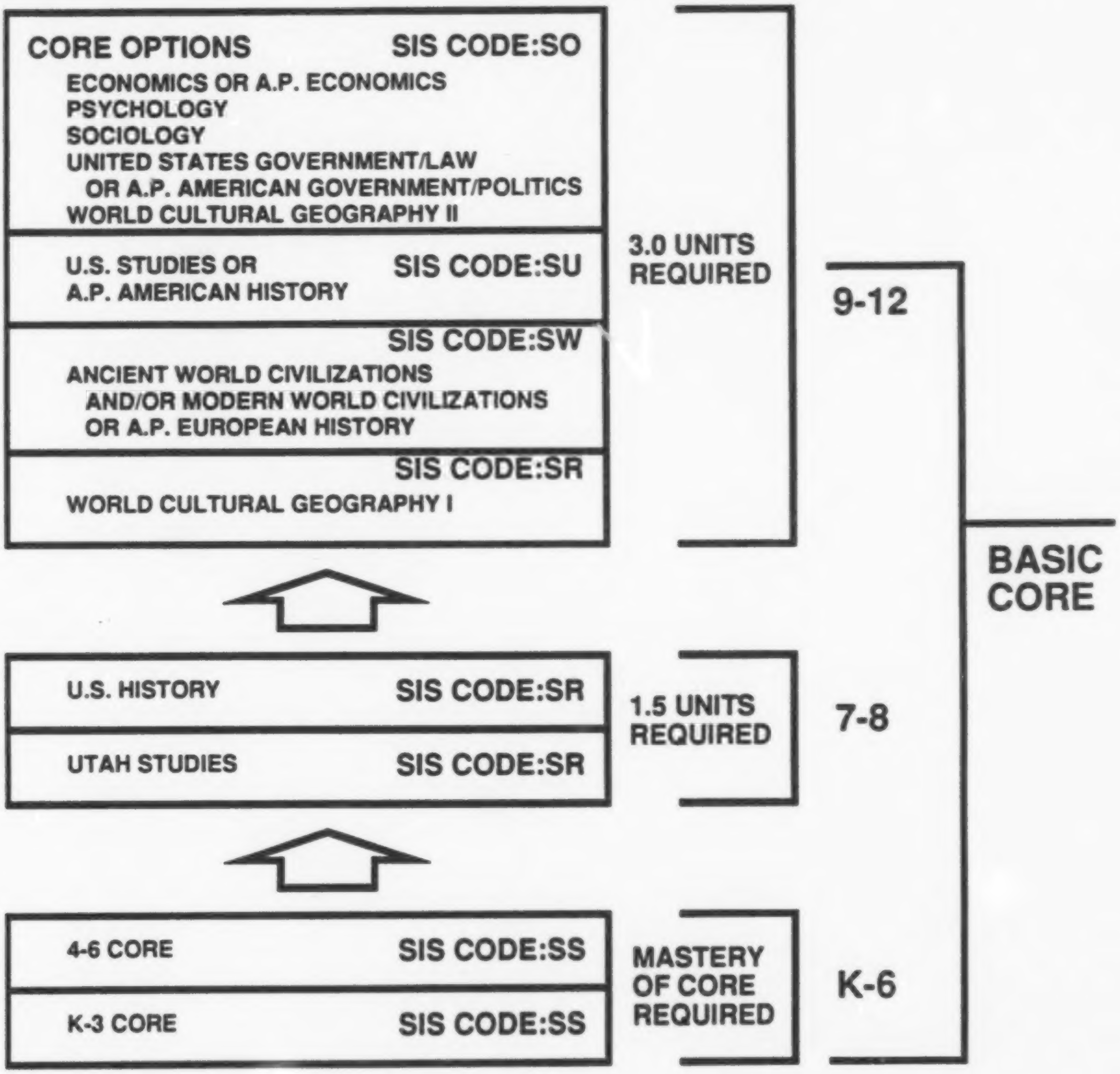
Stressing the mastery of integrated knowledge helps students to move from what is known to an understanding of the unknown, to see relationships and patterns and begin to make generalizations, to understand the interrelatedness of the subject and skills areas, and to succeed in learning. An integrated curriculum helps students learn how to learn.

In conclusion, the social studies core curriculum at all levels emphasizes:

1. Higher level thinking and process skills.
2. Citizenship/character practices and principles.
3. Basic American values.
4. Economic literacy.
5. American Democratic governance.
6. Global awareness and geographic skills.

NOTE: Numbers in parenthesis following objectives in the core curriculum refer to resource file activities.

SOCIAL STUDIES COURSE CHART



CORE OPTIONS SIS CODE:SO
ECONOMICS OR A.P. ECONOMICS
PSYCHOLOGY
SOCIOLOGY
UNITED STATES GOVERNMENT/LAW
OR A.P. AMERICAN GOVERNMENT/POLITICS
WORLD CULTURAL GEOGRAPHY II

U.S. STUDIES OR
A.P. AMERICAN HISTORY SIS CODE:SU

SIS CODE:SW
ANCIENT WORLD CIVILIZATIONS
AND/OR MODERN WORLD CIVILIZATIONS
OR A.P. EUROPEAN HISTORY

SIS CODE:SR
WORLD CULTURAL GEOGRAPHY I

3.0 UNITS
REQUIRED

9-12

U.S. HISTORY SIS CODE:SR

UTAH STUDIES SIS CODE:SR

1.5 UNITS
REQUIRED

7-8

4-6 CORE SIS CODE:SS

K-3 CORE SIS CODE:SS

MASTERY
OF CORE
REQUIRED

K-6

BASIC
CORE

SOCIAL STUDIES LEVEL K

SS LEVEL K

SIS NUMBER: 6000
SIS CODE: SS

COURSE DESCRIPTION, (Levels K-3)

The students will be introduced to the study of self and their relationship to each individual's family, school, neighborhood, and community; basic citizenship/ character behaviors; the interdependence of individuals and groups in different cultures and environments; the world of work; and the use and care of natural resources, community governments, and local history will be emphasized. In addition, the students will begin a study of the earth, its size, shape, land masses, oceans, climates, directions, and its relation to the universe. All social studies experiences will develop listening, speaking, reading, writing, and citizenship/ character skills.

CORE STANDARDS OF THE COURSE

STANDARD 6000-01	**The students will demonstrate the ability to use a variety of listening, speaking, and thinking skills in completing social studies activities.**

OBJECTIVES

6000-0101. Participate in group discussions.

6000-0102. Participate in group role-playing experiences.

6000-0103. Examine a variety of ideas.

6000-0104. Follow simple directions.

STANDARD 6000-02	**The students will understand that individuals live in groups and their lifestyles are influenced by customs and traditions.**

OBJECTIVES

6000-0201. Identify different kinds of groups (family, school, neighborhood) to which they belong. (300-303)

6000-0202. Discuss ways that people are alike and ways they are unique, and that each individual has self-worth. (300-101)

6000-0203. Identify values, traditions, and customs that are learned from families. (300-201)

6000-0204. Identify why special events are sometimes celebrated through various national holidays. (300-501)

6000-0205. Compare ways that various cultures celebrate holidays. (300-502)

STANDARD 6000-03 **The students will understand basic geographic concepts and map symbols.**

OBJECTIVES

6000-0301. Identify the globe as a model of the earth. (300-801)

6000-0302. Identify the major characteristics of the seasons: summer, fall, winter, and spring. (300-805)

6000-0303. Identify map symbols used in the neighborhood and school. (300-804)

STANDARD 6000-04 **The students will understand responsible citizenship/ character and why rules are necessary to protect the individual.**

OBJECTIVES

6000-0401. Participate in making classroom rules with other class members. (300-701)

6000-0402. Identify why rules are important. (300-702)

6000-0403. Identify what authority is and why it is important. (300-703)

6000-0404. Identify basic individual rights and responsibilities. (300-704)

6000-0405. Share materials, respect other people's property, and show courtesy.

6000-0406. Participate in patriotic activities except when against religious beliefs. (300-707)

STANDARD **6000-05**	**The students will understand that people have the same basic personal needs and that sharing is economically necessary.**

OBJECTIVES

6000-0501. Identify the need to share in terms of limited supply. (300-603)

6000-0502. Identify basic personal needs; i.e., food, clothing, and shelter.

SOCIAL STUDIES LEVEL I

SS LEVEL I

SIS NUMBER: 6010
SIS CODE: SS

CORE STANDARDS OF THE COURSE

STANDARD 6010-01	**The students will practice a variety of listening, speaking, writing, and reading skills in completing social studies activities.**

OBJECTIVES

6010-0101. Identify a logical sequence for tasks.

6010-0102. Categorize items of information that are similar from those that are different.

6010-0103. Predict simple conclusions to stories or situations.

6010-0104. Recall facts from stories or reports.

6010-0105. Describe possible solutions to problems in the family, school, or neighborhood.

6010-0106. Participate in group activities and demonstrate respect for basic values of all people.

STANDARD 6010-02	**The students will understand that the family, school, and neighborhood provide basic needs and learning experiences.**

OBJECTIVES

6010-0201. Identify examples of how individuals learn from the family, school, and neighborhood. (301-303)

6010-0202. Show ways in which families provide the basic needs of love, food, shelter, clothing, companionship, and protection to their members. (301-202)

6010-0203. Compare similarities and differences among families, schools, and neighborhoods. (301-201)

6010-0214. Show that every individual has dignity and worth and is unique. (301-102)

STANDARD 6010-03 **The students will understand that where people live influences how they live.**

OBJECTIVES

6010-0301. Identify the geographic features, climatic conditions, and natural resources of the local area. (301-401)

6010-0302. Demonstrate how geographic features, climatic conditions, and natural resources influence how they live. (301-402)

6010-0303. Name natural and man-made changes in their environment; i.e., lakes, volcanoes, reservoirs, highways. (301-403)

STANDARD 6010-04 **The students will understand beginning geographic concepts.**

OBJECTIVES

6010-0401. Identify map symbols which represent real things. (301-802)

6010-0402. Identify the meaning of symbols on simple picture maps. (301-811)

6010-0403. Identify the directions of north and south in relation to the North and South Poles. (301-806)

6010-0404. Name the days of the week in order, special dates on the calendar, and certain physical characteristics of months and seasons. (301-809)

6010-0405. Construct a simple map of the classroom. (301-810)

STANDARD 6010-05 **The students will understand that individuals have unlimited wants but limited resources.**

OBJECTIVES

6010-0501. Define scarcity, and identify items that are scarce in the classroom. (304-601)

6010-0502. Define and identify wants and needs. (300-603)

6010-0503. Identify resources that are used to make the things we need or want. (300-601)

6010-0504. Identify the purpose of money as something which is used to purchase things.

6010-0505. Define private property as things we own.

6010-0506. Discuss the value of work as a way to achieve personal satisfaction and to earn money. (300-604)

STANDARD 6010-06 The students will understand that individuals need rules to govern group behavior.

OBJECTIVES

6010-0601. Make classroom rules with other class members. (301-703)

6010-0602. Identify the reasons for authority and rules. (301-704)

6010-0603. Show how rules help promote fair treatment of all people. (361-705)

6010-0604. Explain how orderly classrooms depend upon cooperation. (361-706)

6010-0605. Participate in patriotic activities, except when against religious beliefs. (301-707, 8, 9)

6010-0606. Identify acts of honesty, morality, courtesy, and good citizenship/character in classmates, teachers, and other adults.

SOCIAL STUDIES LEVEL 2

SS LEVEL 2

SIS NUMBER: 6020
SIS CODE: SS

CORE STANDARDS OF THE COURSE

STANDARD 6020-01 **The students will practice a variety of listening, speaking, writing, and reading skills in completing social studies activities.**

OBJECTIVES

6020-0101. Identify ways to resolve conflict when opinions differ.

6020-0102. Participate in group writings, charts, diaries, and letters.

6020-0103. Discuss alternative solutions to classroom problems.

6020-0104. Locate and use social studies materials in the classroom library and/or media center.

6020-0105. Use a variety of resources to study their community.

6020-0106. Recall facts from stories or reports in sequence.

6020-0107. Demonstrate that through group participation one develops citizenship/character values.

STANDARD 6020-02 **The students will show how individuals are products of their culture and how individual talents and traits are developed.**

OBJECTIVES

6020-0201. Identify cultural traits and values that are inherited and acquired; i.e., family, religious, and cultural traditions, physical characteristics, etc. (302-202)

6020-0202. Show ways in which individuals learn behavior and values from groups in the community; i.e., honesty, respect, responsibility, etc. (302-301)

6020-0203. Identify talents of self and others and discuss how they can be developed. (302-303)

6020-0204. Show ways in which the talents of others have influenced the community. (302-102)

6020-0205. Identify aspirations for using their own talents. (302-103)

STANDARD 6020-03 **The students will understand basic geographic concepts.**

OBJECTIVES

6020-0301. Locate oceans and continents on a map and a globe. (302-801)

6020-0302. Compare the size of the United States with Utah on a map and a globe. (302-802)

6020-0303. Compare differences of an area's size and shape as shown on a flat map with the way they are illustrated on a globe. (302-803)

6020-0304. Find the directions of north, south, east, and west on a map. (302-804)

6020-0305. Describe how the equator divides the earth into the northern hemisphere and the southern hemisphere, and identify the hemisphere in which they live. (302-805)

6020-0306. Show the direction of sunrise and sunset. (302-817)

6020-0307. Identify important sites of the community on an area map. (302-819)

6020-0308. Describe how geographic features vary in different communities. (302-401)

STANDARD 6020-04 **The students will understand that because change is constant, life in any community differs from the past.**

OBJECTIVES

6020-0401. Identify community events of the past, present, and future. (302-502)

6020-0402. Describe the contributions of various cultures that have influenced life in the community. (302-203)

6020-0403. Identify some important local historical sites. (302-501)

6020-0404. Tell about the history of their local community. (302-502)

6020-0405. Describe different factors that influence change, in the community. (302-503)

STANDARD 6020-05	**The students will identify basic consumer needs and the interdependence to occupations.**

OBJECTIVES

6020-0501. Define goods, services, productivity, supply, and demand. (301-602)

6020-0502. Categorize products into "goods" and "services." (301-602)

6020-0503. Conclude that when individuals make choices they must give up something (opportunity cost). (301-601)

6020-0504. Explain that some needs may not be satisfied. (301-603)

6020-0505. Identify some skills needed for community jobs that provide goods and services. (302-604)

6020-0506. Describe the effect of supply and demand on jobs. (303-605)

6020-0507. Explain that with improved skills people become more productive. (301-605)

STANDARD 6020-06	**The students will understand that groups establish rules and procedures for enforcement.**

OBJECTIVES

6020-0601. Name people who help in establishing order and developing values within the community. (302-102)

6020-0602. Identify how acceptance of individual responsibility increases the degree of fairness and freedom in the community, school environment, and classroom. (302-706)

6020-0603. Participate in patriotic activities and understand their meaning except when against religious beliefs. (302-707, 8, 9)

SOCIAL STUDIES LEVEL 3

SS LEVEL 3

SIS NUMBER: 6030
SIS CODE: SS

CORE STANDARDS OF THE COURSE

STANDARD 6030-01 **The students will practice a variety of listening, speaking, writing, and reading skills in completing social studies activities.**

OBJECTIVES

6030-0101. Participate in a variety of activities such as creating stories that promote thinking and problem-solving skills.

6030-0102. Develop a model for making an effective solution to common problems.

6030-0103. Locate and use source/reference materials in the classroom, library and/or media center, community library, and other community resources.

6030-0104. Write original answers to current issues/problems.

STANDARD 6030-02 **The students will understand the cultural and historical development of their local community.**

OBJECTIVES

6030-0201. Discuss different cultures in their local community and the contributions made from each culture. (301-202)

6030-0202. Identify the past and present contributions of women and minorities to their community. (303-202, 305)

STANDARD 6030-03 **The students will understand that people use natural resources to meet their basic needs and these resources must be protected and conserved.**

OBJECTIVES

6030-0301. Identify different environments in which groups live. (303-401)

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6030-0302. Illustrate ways groups use natural resources in the environment to meet their basic needs. (303-402)

6030-0303. Describe how groups modify the environment to use and increase the supply of resources. (303-403)

6030-0304. Identify reasons for the location of a city. (303-405)

STANDARD 6030-04 **The students will understand geographic concepts.**

OBJECTIVES

6030-0401. Identify land and water forms on a map such as islands, bays, lakes, etc. (303-801)

6030-0402. Locate the eastern and western hemispheres, the prime meridian, and the 180th meridian. (303-804)

6030-0403. Using a simple grid, show how a grid system works and identify local places on a map. (303-803)

6030-0404. Use scales and legends on maps. (303-807)

6030-0405. Use symbols for landscape features on a simple map. (303-808)

6030-0406. Identify the differences between people-drawn boundaries and natural boundaries (those which follow natural features such as mountains or rivers). (303-811)

6030-0407. Distinguish between towns, cities, states, countries, and continents using maps. (303-817)

6030-0408. Using north as a reference, identify on a map, globe, or with a compass the directional terms--left, right, north, south, east, and west. (303-818)

6030-0409. Locate places as being north or south of the equator on a map or globe.

STANDARD 6030-05 **The students will understand the interplay of economics in their daily lives.**

OBJECTIVES

6030-0501. Define wages, prices, producer, consumer, specialization, division of labor, profit, loss, and productivity.

6030-0502. Explain reasons for spending and saving money.

6030-0503. Identify the relationship between supply and demand and its effect on the price of a product. (302-605)

6030-0504. Identify the advantage of division of labor (job specialization which increases productivity and creates interdependence). (303-601)

6030-0505. Identify the natural resources that determine the types of jobs in your community in the past, present, and future. (303-604)

6030-0506. Identify the role of profits as being the primary reason for production. (304-602)

6030-0507. Identify how inventions influence change in society.

STANDARD 6030-06 **The students will understand that the purpose of government is to protect and serve the needs of citizens in their community.**

OBJECTIVES

6030-0601. Explain the need for government in a society.

6030-0602. List some simple ways that government resolves conflicts in their community. (303-701)

6030-0603. Compare ways that groups or societies determine how they will be governed in their community. (303-702)

6030-0604. Discuss responsibilities that individuals have in making a community a better place to live. (303-703)

6030-0605. Discuss their responsibility in making and following class rules. (303-707)

6030-0606. Identify how laws are established, and how they relate to individuals, families, and communities. (303-705)

6030-0607. Identify the purpose of patriotic holidays and how citizens participate (Veteran's Day, Law Day, Independence Day, etc.).

6030-0608. Explain how participating in and contributing to government develops good citizenship/character behavior.

6030-0609. Identify acts of honesty, morality, and citizenship they have observed in their classmates, teachers, and other adults.